

ITEMS OF INTEREST.

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No. 4.

ORIGINAL COMMUNICATIONS.

PORCELAIN DENTAL ART.

W. A. Capon, D.D.S., Philadelphia.

[CONTINUED FROM PAGE 134.]

Fig. 11 represents the worn teeth of Mrs. S., of Philadelphia; aged forty-eight; bilious-nervous temperament, and good health

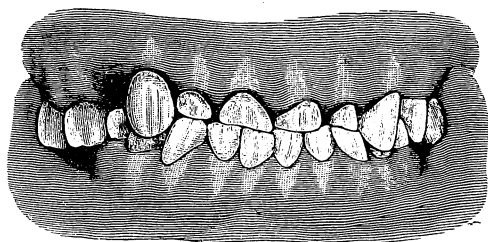


FIG. 11.

generally. The jaws were opened about a fourth of an inch by bridging spaces from cuspid to first molar, on both sides; and then covering upper incisors with porcelain jackets. This presented a finished appearance as in Fig. 12. There was no interference with

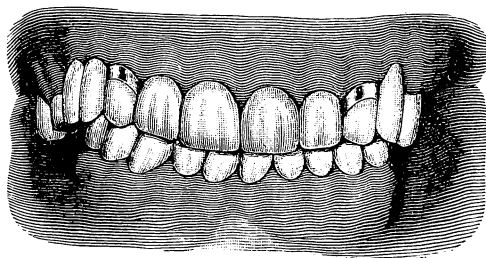


FIG. 12.

pulps. After three years' use there is satisfaction in every way.

Fig. 13 represents a clinic demonstrated before the Connecticut Valley Dental Society in June, 1891. The patient was a stout,

healthy young man of nineteen years, having a peg or rice tooth for right lateral. The right central had been extracted; the left central was badly decayed, but the pulp living and unexposed; no left lateral had ever erupted. The principal difficulty was to fill

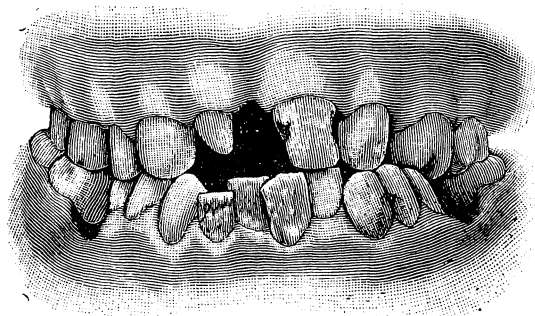


FIG. 13.

the space naturally, as there should be four teeth, yet through extraction and deformed lateral there was insufficient room for three. As the young man was stout and of full face I decided to fill space with two rather large centrals [Fig. 14]; and looking very natural, but without laterals, though such a loss is frequently seen.

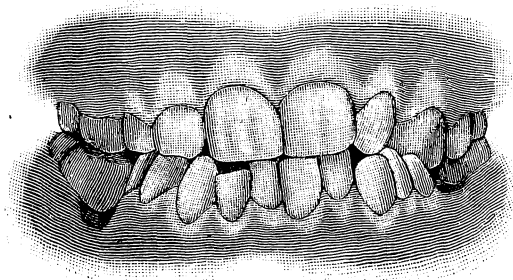


FIG. 14.

In fitting jackets the loss of gum in right central space had to be filled, which was done by adding a portion of gum enamel to the top of each tooth, which matched the gum color. In a day or two it was scarcely discernible.

The next cut [Fig. 15] is of the teeth of a lady over eighty years of age, living in Philadelphia. They show the wearing and splintering of upper teeth forced to do the work of all other teeth till they had become almost useless. The cuspids were covered with gold, and used, to take force of bite; protecting porcelain jackets that were placed over centrals and laterals. They were made with broad

cutting surface, and for use more than appearance, though Fig. 16 showing case finished as being quite natural. After two years'

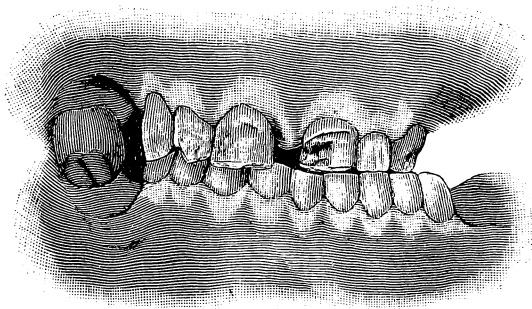


FIG. 15.

wear the lady is still happy and satisfied to get along without a plate. This case demonstrates the fact that such work is not necessarily painful, when a woman of such advanced age suffered

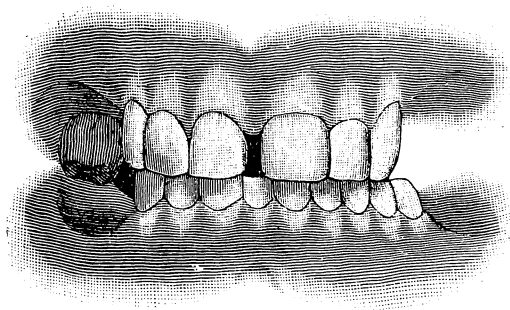


FIG. 16.

no inconvenience or nervousness, though there was considerable grinding done.

Fig. 17 represents the teeth of a lady residing in Philadelphia, aged thirty-eight, who claims that loss of teeth and tooth structure was caused by use of mercurials prescribed during a long illness, while in Europe some five years ago. Up to that time she had almost a perfect denture, but after the use of those medicines she showed every symptom of pytalism, gums receding and many teeth loosened, while those remaining firm began to crumble and wear away rapidly on the cutting edges, and also lose their vital appearance, till an operation was necessary to prevent total loss of teeth and premature aged appearance. The first upper right molar was almost out of its socket, and was removed to allow use

of bridge supported by wisdom tooth and first bicuspid. The lower space from third molar to second bicuspid was also bridged,

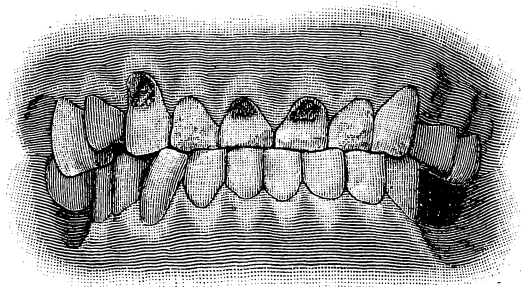


FIG. 17.

opening the bite to natural position. The front teeth were covered with porcelain, and appeared as in Fig. 18. The first bicuspid on right side was attached to the bridge as an extension, and its mate

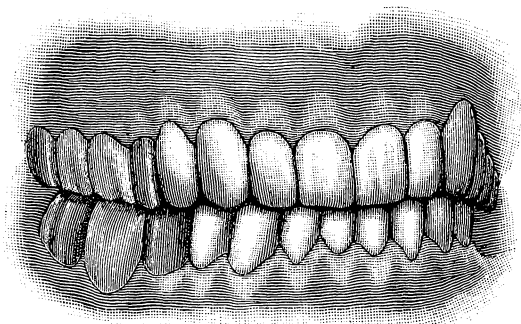


FIG. 18.

on the left was fused to the jacketed cuspid. The recession of the gums make the teeth appear a little longer than natural, but in such cases the gums must be met and the cavities covered. The right central was the only one treated, and all the foundations are strong. The completed case is one of the most successful from an artistic standpoint of any shown.

The following case [Fig. 19] was described and shown to the profession four years ago, and excited interest both as to cause of loss of tooth substance and mode of reparation, and I place it before the profession again merely to prove the value of this class of work. From latest accounts I hear that this work is in good shape and satisfactory. It was simpler than others already shown, for the teeth required very little preparation. The making and placing

crowns was all that was necessary to complete the case [Fig. 20], without any supporting or interfering with natural occlusion.

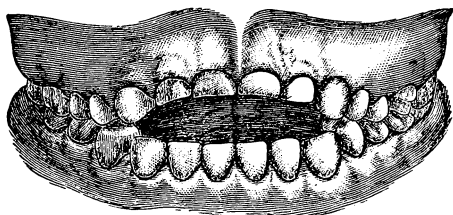


FIG. 19.

I have endeavored to show the almost unlimited means and great advantages belonging to this class of work, overcoming great difficulties and deformities in an almost imperceptible manner,

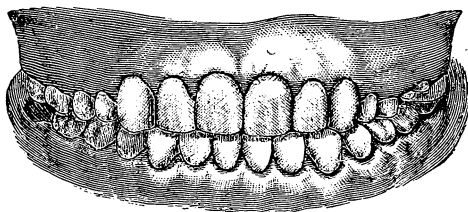


FIG. 20.

and at same time giving strength and comfort. An agreeable feature of this work is the absence of irritation at the gum line. In the hundreds of jackets that I have in use I do not know of a single instance requiring treatment for that trouble.

[TO BE CONTINUED.]

ETIOLOGY OF DENTAL CARIES.

Dr. S. B. Palmer.

In American Association.

Twenty years ago the teachings of Dr. S. B. Palmer on the electro-chemical theory of secondary decay were in advance of the times, and met with much opposition; but science has overcome prejudice, and the principles then laid down are now quite generally admitted.

Electrolysis must be understood as the principle governing the composition and decomposition of matter. Taking metallic filling materials as the elements of a battery, the tooth being an electrolyte, dental caries is an effect of the electro-potential relations of matter. There is a continuity of law through the inorganic, the vegetable, and the animal. The electro-chemical theory

of caries is founded on these natural laws. When gold is malleted against the frail walls of a tooth, the bruised surface of porous dentine becomes an electrolyte. The metal being at a potential higher than that of dentine, secondary decay results as the effect of electrolysis. This is entirely apart from primary caries, resulting ferments, organisms, and organic acids. The important discoveries made in regard to chemical action in the mouth, and the use of antiseptics to prevent fermentation and destroying organisms, do not offer a remedy for the arrest of decay from the action of oxids.

Peculiar combinations are found in the oral cavity, with its undercurrent of oxygen—a negative element—the tooth being an electrolyte raised to the animal or vegetable plane, ready to be acted on and destroyed. Cut out the disorganized portion of a tooth and insert a filling of such material as shall exclude moisture and oxygen, and there will be no secondary decay. If softened dentine and cavities in deciduous teeth are treated with nitrate of silver, the oxid of silver raises the potential of the dentine above that of the secretions of the mouth, and caries is arrested or prevented. Nineteen years ago Dr. Palmer wrote: “* * * On this principle nitrate of silver turns the teeth dark, but checks caries.” Oxygen, under the laws which govern the positive and negative relations of the elements, is the primary agent which produces dental caries, and to arrest decay we utilize the oxids—which are proof against oxygen—through the means of metal fillings which are of higher potential than the organic constituents of dentine. The fillings furnish an insoluble stannic oxid, through the simple process of oxidation. No decay occurs as long as the black carbonate remains, but it is soft and does not resist the brush or pick.

If gold and tin are joined in a filling an interchange of atoms is caused by electrolytic action, and an alloy of tin and gold is formed, raising by induction a portion of the tin to the same potential as gold, and secondary decay follows; but if not more than two layers of tin are used the dentine is furnished with a carbonate, and gold can be successfully used when otherwise it would be a failure. Decay around gold fillings is in obedience to laws which manipulative ability cannot counteract. The current from the filling of higher potential decomposes moisture in the dentine liberating oxygen, which is attended with an acid, and dissolution of the limesalts results.

In all alleged amalgams there are unamalgamated particles in the mass which are negative, the amalgamated portion being positive, consequently local galvanic action is established, oxidation filling normal dentine with oxid and sulphide and no harm is

done, but if the dentine is below normal, local action is too vigorous, the lime element of the dentine is dissolved, the cavity is enlarged and the plug reduced. Line the cavity in such teeth with tin, pressing it in with a ball-burnisher, and you get the benefits of oxidation, filling the tubuli with an insoluble compound, while no local action takes place to cause shrinkage of the plug. The stannic oxid is not objectionable and prevents shrinkage, which occurs from galvanic action when the tin lining is not used.

Suggestions for root filling are based on the same principles. All fillings below the gingival are in an alkaline field; here oxygen gives an alkaline reaction which explains why unfilled canals in tooth roots do not enlarge in the same proportion as cavities in tooth crowns. In filling root canals the opening at the apex is a spring which cannot be dried up. If an oily substance is inserted on filling the canal, some oil remains which cannot be volatilized, even with broaches heated with electricity. In time the oil is oxidized and the canal becomes filled with septic matter. But introduce the liquid of oxichlorid, which checks bleeding, fill with a thin mix, and introduce a gutta-percha point, forcing all excess of fluid out through the apex, and closing the opening. After the gum of gutta-percha is oxidized an oxid remains, this preponderance of oxid preventing further oxidation. Hence the permanency of gutta-percha and oxichlorid fillings. The liquid phosphate is not metallic, and hence the advantage of oxichlorid over oxiphosphate. In concluding his very elaborate paper Dr. Palmer said: Dental caries is an effect of universal principle, based upon the potential relations of matter, oxygen being the principal element, aided by electrolysis and capillary attraction, under the direction of electrical energy.

In the discussion of this paper, Dr. Frank Abbott said that Dr. Palmer always brought forward original ideas with very much in them worthy of being canvassed by the Association. He agrees with Dr. Palmer as to the use of essential oils in root canals, and has also abandoned all attempts to dry them out. He washes them out with an aqueous solution of bichlorid of mercury, 1 in 10,000, and fills immediately. We formerly treated and over-treated, and treated to death, but we have now learned that filling the canal is the therapeutic means of cutting off the supply of irritating matter and allowing the wound to heal.

Dr. John S. Marshall said it had been his good fortune to be a neighbor of Dr. Palmer when he was making the experiments on which his conclusions were based. That many harsh things had been said about the New Departure, but that it had created great changes in modes of practice. All chemical elements and

all matter are either positive or negative, even articles of food come under the same law, which may account for the greater zest acquired by certain articles of diet when eaten in Paris, as ham and eggs or roast turkey and cranberry sauce, the saliva connecting the positive and negative poles of this galvanic battery. This has been tested by the actual deflection of the needle of the galvanometer. We all fill teeth and the roots of teeth, but we do it blindly and not on scientific principles as expounded by Dr. Palmer, to whom all honor is due.

Dr. A. W. Harlan asked if gutta-percha is an oxidizable substance; why it was chosen to cover the great Atlantic cable; that methods of root-filling do not properly come under this section; that the use of tin under gold fillings was not introduced by Dr. Palmer, or the New Departure men, but had been in use thirty or forty years earlier; that the experiments of Miller and Black on the etiology of caries have the electro-chemical theory of caries; no ground to stand on, decay being proven to be due to the agency of microorganisms through their excretory products.

Dr. Marshall replied that the theory of Dr. Palmer does not in any way antagonize the conclusions of Dr. Miller, as it applies to secondary decay occurring after the insertion of metal fillings in teeth of low grade and soft texture, where, from excess of moisture, a battery is established in the teeth. Neither does Dr. Palmer claim to have been the first to use tin under gold fillings, but he is the first to give a scientific explanation of its protective value, and he is entitled to that credit. Decay under gold fillings is not always due to faulty manipulation. There is something else that causes that breaking down of tooth structure at the cervical margin of the finest gold fillings. The operation may be as perfect as possible, the gold thoroughly and carefully packed, and yet secondary decay occurs. The reason for these failures is Dr. Palmer's point.

Dr. Harlan emphasized the statement of his position that the agency which produces decay in the first place, produces it again, and that the electro-chemical theory has nothing to do with it. Gold inserted in a tooth does not oxidize; it is not soluble. If primary decay is due to microorganisms, as proven by Dr. Miller, so also is secondary decay, and there is no necessity for any other theory.

Dr. J. Y. Crawford spoke of the statement that one pole of the battery accumulates acids and the other alkalis, and said if that is a scientific truth there is more in the theory of electric influences producing caries than we imagine. Dental caries *per se*, both primary and secondary, is fundamentally the same. There

may be many factors in the production of caries, but the specific result is the same. If electrical influence is acid at one pole and alkaline at the other, it may be that it has an important factorage in dental caries.

Dr. Louis Jack, in explanation of his inability to accept Dr. Palmer's theory, thinks that if it were true, all margins would have a tendency to decay alike. Drs. Miller and Black account satisfactorily for the recurrence of decay from the conditions which exist.

Dr. Abbott thinks that if a filling is equally perfect in all parts, and well-finished in every respect, there can be no action between the dentine and the filling, and that the trouble is due to faulty manipulation. Whether the resulting secondary decay be due to electric action or micro-organisms makes very little practical difference; but the idea is very feasible that there may be a current between a defective filling to the tooth, and return acids being thus generated; and he would not, therefore, decry Dr. Palmer's theory, as there may be a great deal in it.

Dr. Bogue: How long could that battery act?

Dr. Abbott: It would never cease as long as the conditions exist.

By what process of reasoning do we justify the custom of calling "self-made" him alone who rises to eminence from poverty. The fact, of course, is that any man is self-made who is ever made at all. Wealth and social position may supply the opportunity of greatness, but they never made a man great. It is a question whether wealth and distinction are not distinctly unfavorable to any form of greatness with which a man may have the good fortune to be endowed by nature. There is something wholesome and bracing in poverty. No great race has ever been produced in an enervating tropical climate; the manly virtues flourish in rapidly increasing ratio as we journey away from the equator. The youth who is born with a golden spoon in his mouth, and is lapped in luxury from his cradle onward, has not half the chance to make a man of himself. If he turns out a tolerably decent fellow and does a man's work in the world, he has great reason to congratulate himself; while if he proves to be a man of genius and makes all mankind his debtors, something very like a miracle has been wrought. We do well to honor those who have overcome the obstacles of poverty and deficient early training, but let us honor even more those who have conquered the temptations of wealth and the flatteries of society.

Henry C. Vidder.

FITTING PLATES.

L. P. Haskell, Chicago.

In the ITEMS for November I find the following, and various answers or suggestions appended :

Question 169. I have a case of full upper denture, of which I have taken three perfect impressions with plaster. The mouth is of good shape; arch averagely deep; the ridge in center very hard and rather soft on each side. I have cut out on each side of cast so as to raise the plate on the soft parts, and cut an air chamber, so as to take the pressure off the hard center, and still I fail to obtain a particle of suction. Even the impression does not adhere, but when hard drops right down. Will some one recommend a remedy?

The writer says he has "cut out on each side of the cast, so as to raise the plate on the soft parts." Raising the plate on the soft parts is just the wrong thing to do. Then he has "cut an air chamber so as to take the pressure off the hard center." He has not taken the pressure off the hard center by this means, because the anterior and posterior margins of the air chamber still rest on the hard palate.

This fitting full upper plates and getting adhesion rests on one simple fact that must always be borne in mind, viz., that the center of the palate is nearly always hard, unyielding, and the only portion of the upper jaw that never yields to pressure, while elsewhere there is, sooner or latter, a giving away, or absorption of the alveola ridge. This is almost invariably true under rubber, owing to the retention of undue heat. Now, unless provision is made for it, the plate rests alone on the hard center and is rocking. Provision must be made for it by a "relief" covering the entire hard palate from near the anterior margin to within three-sixteenths or one-fourth inch of posterior margin of plate, for, of course, the plate must come in close contact there, so as to exclude the air.

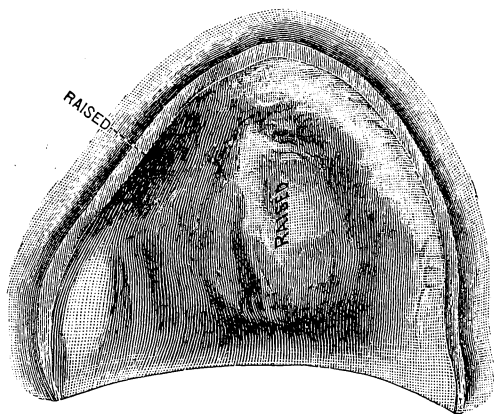
This is done in metal plates by placing a thin film of wax (I use half the thickness of wax card for teeth). The edge must be even with the model. In rubber plates I remove, with a large cone bur in the lathe, the same amount from the rubber when finishing.

If the plate comes in close contact with the membrane, except as relieved over the hard palate, there will be all the adhesion necessary. In less than 1 per cent of cases the palate is soft in the center, and when this occurs there is usually a crevice. In these I make no change, but allow the plate to come in close con-

tact all over the palate. I have worked along this line for thirty years, making no use of air chambers, deeming them useless, and in some cases worse than useless, and find no difficulty in securing adhesion in the flattest of mouths, even in the use of heavy continuous gum work.

It may not be known to those who do not use metal plates that often better results are secured with a metal plate, swaged on a proper Babbitt metal die, than can be secured with rubber. This is notably true of aluminum, using a thick plate, gage 24, attaching the rubber to the plate by the use of the "loop punch."

The accompanying cut of a model, on which I made an aluminum plate, illustrates this. It is the worst case for a suction plate



I ever met. On the right side of the jaw a portion of diseased bone had been removed, and this makes a hard spot one-half inch in length. The rest of the ridge, what little there is of it, is flabby. The palate is hard and elevated. I raised the model slightly over the hard spot on the right side and over the palate. It is an aluminum plate. The denture is one inch long in front, and one and one-quarter inch at the right side. The patient told me, after wearing it eighteen months, that he often forgot he had a plate in his mouth. He previously had made seven plates, and this was the first success, and was very desirous no one should know he wore artificial teeth. The principle holds good in all cases, as the hundreds of models on my shelves of every conceivable condition have testified.

There is one factor, however, that is too often overlooked, and that is the occlusion of the teeth. The best fitting plate and good adhesion are often counteracted by the front teeth striking, or the teeth being a trifle longer one side than the other.

ANESTHETICS.

Is the Anesthesia Caused by Nitrous Oxid Merely Venous-coma, Proving that this Gas is not an Anesthetic?

Is the Mixing of Para Oxygen with Nitrous Oxid for Inhalation Opposed to Physiological Facts?

Robert Marston, Lancaster, England.

[CONTINUED FROM PAGE 145.]

It is generally known that the failures experienced by operators of the past, in their use of nitrous oxid, was attributed to the almost impossibility of excluding atmospheric air from it during its administration, owing to the imperfection of their appliances, and apart from a knowledge of that fact; the first experiment with the mixture of nitrous oxid and oxygen was an act of extreme rashness condemned from ever standpoint of reasoning, for to conceive the possibility of their chemical union is to anticipate the gruesome post-mortem evidences of corrosive poisoning, while to entertain the impossibility of chemical combination is to admit the wisdom of using common air as a diluent in preference to manufactured oxygen, and, lastly, the power of oxygen to produce that other extremely opposite condition, known as apnea, would be neutralized by the admixture of any negative asphyxiant; consequently, its use under that supposition would place in the light of ridicule any addition of nitrous oxid. It is generally admitted that nitrous oxid combines with the hemoglobin of the blood to form nitrous-oxid-hemoglobin in the same manner as oxygen forms oxihemoglobin, nitric oxid forms nitric oxid-hemoglobin, and carbonic oxid forms carbonic oxid-hemoglobin. Perhaps in this change the hematosin itself becomes actively engaged in the formation of new adaptations with these gaseous reagents when they are presented to the red corpuscles, and certain appearances have given rise to an opinion that the iron molecules of the hematosin convey oxygen to the innumerable chemical laboratories of the body, where they eke out their separable contents proportionately to the peculiar requirements of each department. The iron presumably existing as ferric oxid, or as a ferric salt in arterial blood, while its reduction to a ferrous state is supposed to be the pigmental cause of venous blood.

Though the therapeutic action of iron in the treatment of anemia seems favorable to this opinion, there are others who believe that this theory does not satisfactorily explain the corpuscular changes; they attach no importance whatever to the presence

of iron, and ascribe the pigmental cause to a purely organic origin, contending that the difference of color which distinguishes arterial from venous blood is an optical effect, consequent on the corpuscles losing the biconcave and assuming the biconvex form.

The comparative difference noticeable in the effects of carbonic acid and carbonic oxid, on the red corpuscles, affords a strong example in support of that view, for if the one atom of carbon and two atoms of oxygen, constituting carbonic acid CO_2 , reduces oxihemoglobin, how can the excess of carbon contained in carbonic oxid CO , by chemical combination with the iron, produce an appearance proximating that of oxihemoglobin?

It is probable that both theories are correct to a certain extent, and present two phases of the controverted fact.

It is just as absurd to ignore the physiological value of iron, as it would be to deny its presence in the red corpuscles.

Doubtless the corpuscular changes involve corresponding physical as well as chemical differences of the iron molecules, which, if not separately sufficient to account for the pigmental effects of venous and arterial blood, must participate as a cause in those appearances.

There is nothing in the chemical nature of iron that indicates its incapability of playing in the capillary changes, not only as a chameleon pigment, but also as an active principle in the condensation of the gaseous cargo which the blood conveys to the systemic laboratories; nor is there wanting undeniable proof of this, for the diagnostics of diseases co-existing with any considerable diminution in the number of red corpuscles, when considered in connection with the successful issue of iron treatment in those cases, overwhelmingly disproves the puerile assumption that iron is a superfluity.

The provisions of nature for abstracting oxygen from vitiated sources, keeping in check noxious contaminations, supplying separate products for the fabrication of diversified tissues, and removing their disorganized refuse, are not within the grasp of the human mind; but whatever the causative principles of respiratory combinations may be, they evidently characterize the red corpuscles as gas carriers, and as the saturation capacity of these gas carriers is a fixed limit, it naturally follows that any admixture of nitrous oxid with the common air would occasion a proportional decrease in the quantity of air contained; in other words, every volume of nitrous oxid encroaching on this saturation capacity displaces and stands instead of one volume of air. That being so, if the corpuscular cargo contains 50 per cent of nitrous oxid, the process of oxygenation is diminished one-half, consequently 50 per

cent of the structural *débris* which should have been converted in CO_2 cannot be so removed; hence an abnormal accumulation of carbon follows more or less speedily, according to the partial or complete displacement of atmospheric air, and oxygen starvation proceeds as nature taxes her last resources and reduces the residual oxihemoglobin of normal venous blood. The process is essentially one of asphyxiation, and that intermediate stage which skill recognizes as anesthesia is simply a state of venous or asphyxial coma, caused by the toxic action of venous blood on the nervous centers.

To suppose that nitrous oxid is an anesthetic is to assume that it either plays the part of a toxic compound radicle in the vito-chemical equations of the body, or else that its disassociated elements separately participate in the play of affinities; but if nitrous oxid disported itself as a toxic compound radicle, its narcotic power would assert itself, as that of chloroform, ether, and other narcotics, though atmospheric air were freely admitted with it to the lungs, a result which practitioners know is impossible of attainment.

On the other hand, if nitrous oxid became chemically split up during the corpuscular changes, arterialization of the blood would in that case inevitably ensue with abnormal energy, owing to the greater proportion of oxygen which nitrous oxid N_2O contains, as compared with the proportions of oxygen and nitrogen found in common air $\text{N}_4 + \text{O}$.

That this arterialization does not take place is sufficiently proved by the characteristic lividity of gas patients and other indications.

Physiological effects are incompatible with the supposition that nitrous oxid is an anesthetic; appearances distinguish it as a negative asphyxiant, *viz.*: An inert atmosphere which serves only to fill the dilating lungs during inspiratory efforts, thereby enabling the mechanical performances of the respiratory mechanism to go on during the temporary cessation of pulmonary chemical action, caused by breathing a physiologically undecomposable atmosphere.

It may be urged in opposition to the foregoing remarks that the direct specific action of nitrous oxid has been adverted to by standard authorities of the past, as well as by those of the present time; and is, moreover, easily demonstrable. In reply to that objection, I first admit that the hilarious tendency of nitrous oxid is a demonstrable fact, and then dispute the reputed cause.

We have to remember this peculiar manifestation depends on the joint action of air, or its equivalent, intentionally or accident-

ally administered along with the nitrous oxid, and that the so-called anesthesia, following gas inhalations, depends on the exclusion of air or its equivalent from the lungs during its administration. It is impossible therefore, by any stretch of reason, to show that this hilarity results from the direct specific action of nitrous oxid on the brain and nervous system, and the fact that pure nitrous oxid, free from available oxygen, is perfectly incapable of producing this peculiar phenomenon, is quite as easily demonstrable.

This curious manifestation is referable partly to the specific gravity of nitrous oxid, and partly to its partial displacement of air. The difference of N_2O 1.527, as compared with that of $N_2 + O$ 1.00, offers mechanical resistance to the play of affinity between oxygen and carbon, and retards the formation of CO_2 , whilst the deficiency of oxygen, caused by the partial displacement of air, assists in producing some degree of carbonic plethora, and the corresponding corrective intensity of catalytic nerve power, whose varying intensity variously groups and governs all the chemical processes of the human economy.

Doubtless the combined tendencies of those two coöperating causes is that nervous irritation or excitement which characterizes that particular mode of conducting oxygen starvation. When nitrous oxid comes to be regarded as a negative asphyxiant, it will then be understood why it has the reputation of being the safest of all known anesthetics. The prevailing opinion that it is a narcotic whose peculiar action distinguishes it so distinctly from the dangerous compounds of its class, appears irrational when the diffusibility and cumulative tendency of all respiratory narcotics is relatively considered.

The long-continued use of nitrous oxid has demonstrated that it is safer to produce anesthesia by oxygen starvation than by giving an artificial toxicant.

The abnormal accumulation of natural products formed in the body is less hurtful in quantity, quality and distribution, to the delicate organism, and its finely-poised multifarious functions.

During that kind of anesthesia which results from oxygen starvation all the coexisting conditions are relatively connected; their deflection is uniform, and represents a string of alternated causes and effects, whose tension to rebound with reparative coöperation so soon as the swerving power of the asphyxiant is removed, constitutes that ignored cause which distinguishes the safeness of nitrous oxid from the ungovernable capriciousness of every other tabulated "anesthetic." Here the absence of oxygen has caused an accumulation of natural products whose eagerness for the missing element increases with the increasing carbonic plethora, whose

distinct but peculiar toxic power on the nerves, while obtunding their sensibility, increases—up to the limit of possible resuscitation—their involuntary motor impulses and catalytic intensity, and converges vital energies to the point of assimilating an element which nature supplies on every side; but when chloroform, ether, or any other anesthetic is used the result is far different; toxic asphyxiants have a stronger affinity for the complex molecules of nervous tissues than for the crude and comparatively elementary substance of the circulation, thus they directly attack the fundamental principles, which, subservient to the first cause, create and control all the phenomena of life, diffusing general necremia, sometimes more quickly than the circulation could carry it, and paralyzing the vital endowments even whilst the respiratory changes are, to all appearances, ordinarily taking place. What has now been said shows,

1. That no advantage is derivable from the practice of mixing pure oxygen with nitrous oxid.

2. That nitrous oxid is the safest of all anesthetics, simply because it is a negative asphyxiant misplaced in the list of anesthetics.

3. That when nitrous oxid is administered first, and the operation is subsequently continued with chloroform, the resulting anesthesia in that circumstance is not the joint effect of nitrous oxid and chloroform, but is purely the effect of chloroform, the influence of nitrous oxid having been previously removed by the atmospheric oxygen during inhalation of the chloroform.

4. That for necessarily long dental operations the best result is obtainable by first administering a few whiffs of chloroform, and then completing the operation with pure nitrous oxid, though the quantity of chloroform inhaled is quite insufficient to produce any perceptible effect, it considerably prolongs the anesthetic period.

5. The maximum of danger is obtained by mixing a toxic asphyxiant with a negative asphyxiant in the face-piece or other part of the gas apparatus, and continuing their joint use till anesthesia is complete.

To use a paradoxical simile we may liken this practice to lighting a candle at both ends and thrusting a red-hot poker through the middle.

“When both destroyers meet the central void,
There is much confusion and regret beside.”

This may perhaps be prevented by viewing facts with our own eyes instead of always trusting to the views of others.

DENTAL LEGISLATION.

Dr. A. W. Sweeney, Washington, D. C.

Read before the Southern Dental Association.

There is great need for reform in dental legislation.

A report that the State Examining Board intended to examine the graduating class at the final examination in one of the colleges, caused that class to be the best prepared of any graduated from that college in years, and another said that some of the most prominent educators in the colleges are in favor of dental laws and Boards of Examiners. Admitting all this to be true, we do not see in it anything to sustain the position of some who try to maintain, that no college degree or State certificate in another State, shall be accepted in lieu of an examination where a new residence is desired.

We are not opposed to dental laws if designed to accomplish proper results, but we hope to see them grow broader, more comprehensive, more effective, and in some respects, more stringent. We hope to see laws which will not wink at the prosperous and arrogant quack, while seizing on and terrifying the young and struggling graduate. We should have laws which cannot be made retroactive, and which can be made more clearly to define what constitutes malpractice, and which shall impose some restriction on the wholesale and reckless abuse of local and general anesthetics, with the consequent shameful destruction of teeth.

Would it not be vastly more commendable to attempt such legislation? This would be practical legislation; yet some seem to aim only on devising means calculated to render it difficult for a young man to commence practice, but devoid of all effort to impose restraint on those who might be disposed to practice dishonestly.

The lack of judicious provision in the laws for the suppression of practices injurious to the public constitutes their most conspicuous weakness, while the evidences which they disclose of efforts to incorporate monopolistic tendencies are a reproach. Whatever may be the differences of opinion among merchants, manufacturers and politicians in regard to "the protective system," it is unethical, narrow and utterly indefensible when applied to the regulation of professional practice. Much of the adverse criticism against the dental laws can be traced to obvious efforts to embody in them provisions which tend to give dentists already in practice an advantage over those yet to enter.

At least two of our own laws, those of Connecticut and New

Mexico, contain provisions for revoking as well as for granting license to practice. The laws of the German Empire are not only severe on all quacks, but provide for the punishment of editors and proprietors of newspapers who advertise quack nostrums. The chief field of usefulness for such a law would be in ridding the columns of our newspapers of humbug medical preparations, and those intended to be put to criminal uses, and also the various "vapors," "airs," etc., declared to be "so much better and safer than gas," and the many nostrums containing cocain and other dangerous drugs. While the law is not competent, and does not presume to dictate what steps a person may take to attract custom, within certain limits, deception and misstatement are not legitimate means to that end; hence, to announce old and well-known agents, under fictitious names, as wonderful, new discoveries, or dangerous drugs as perfectly harmless, is as clearly a violation of the spirit of the law as it is to obtain money by means of any other misstatement or false pretense.

A gentleman who practices in South America writes, "All anesthetics are prohibited to the dentist in the Argentine Republic." While this may be deemed rather sweeping, it is a severe comment on the reckless indifference of our own laws.

It seems strange that, after having seen American graduates holding the foremost positions in Europe for years, and after these countries have so long sent their students here to be educated, the profession in Europe must now secure the passage of laws which shut out all future American graduates. It may be difficult for us to estimate their necessities, but in spite of the familiar excuse about different standards of preliminary education, we and they know the average American graduate to-day is better fitted to render valuable service than the graduate of any dental college in Europe.

An editorial in the *Dental Cosmos*, entitled "American Dental Competition," contains two extracts from English journals which, in the opinion of the editor, may furnish an explanation of "the animus of the recent protective legislation of the General Medical Council of England." The first article states that it seems probable that the Medical Council "is making itself the servant of the British Dental Association, especially in regard to the refusal to register American dental diplomas;" and while some allusion is made to differences of opinion "in regard to preliminary education," it is intimated that "the professional competition of American-registered dentists" may have been found "to be inconvenient." Replying to this, the *British Journal of Dental Science* fails to agree with the opinion of its contemporary as to the "inconveni-

ence" alluded to, and states that "we have always thought that the memorial to the Council was signed by dentists who represented the hospitals, schools and students. It was pointed out that a home-grown student might be tempted to leave the present British curriculum, escape his examination in preliminary education, and get a foreign dental diploma entitling him to register before his stay-at-home brother had completed his five years' training."

A candid comparison of these two statements, with a moment's reflection on the well-known popular estimate of the American graduate among the English public, will leave little room for doubt as to which one more fairly represents the true "animus" of the recent legislation; and it is highly gratifying to note that the well-known love of fair play, which is such a prominent trait of British character, has found an advocate among their own journalists, while the editor who dissents from the opinion expressed about the "inconvenience" of American competition, and calls attention to the hardship which "was pointed out" as likely to befall the "stay-at-home brother" student of him who might go abroad to graduate, may be reminded that it is not the usual custom of those who seek "protective legislation" to point out too clearly their most potent reasons for urging its adoption.

But to return to the dental laws of our own country. How can we justify a law in Massachusetts, New Jersey, Colorado, or the State which now entertains so many of us as her guests, which accords no recognition to a diploma, and will recognize no certificate from another State Board of Examiners?

These laws have been the cause of hardship and oppression to worthy persons, and they have not occasioned any higher standard of attainment among those who practice under them; neither have they better served to rid the communities from charlatans, than the laws which are more lenient toward regular graduates. We are glad to hear it announced that the National Association of Dental Examiners is to take some action on the subject this present summer.

Dentists generally claim that their profession is a progressive one; and that the college is an obvious need, calculated to contribute to its progress. "Our colleges, our journals, and our associations," said the presiding officer in the largest dental meeting ever held, "constitute the great tripod on which all professional advancement must rest."

We are opposed to the feature of some laws which deprive the college faculties of the right of determining when their students are competent to practice, by decreeing that no graduate shall

commence practice without first submitting to an examination by a Board of Examiners. We believe an adherence to that policy will lower our colleges and their graduates in the eyes of other nations, and thus rob us of that pre-eminence which American dentistry has so long and so justly held abroad. It will perpetuate a bitterness, and foster a tendency to mix methods which belong more properly to the realm of politics, into our professional relations.

When one State admits graduates to practice without an examination, and another does not, they cannot both be right. The true issue is, which measure will better serve the interests of whom? The dentists of the State, the few who frame the law, or the colleges? No! Of whom, then? The people of the State.

We have failed to meet with one single good argument in favor of the exclusive style of dental legislation.

Let all who feel disposed to support exclusive laws, stop a moment, and consider how they are regarded by some of the grandest and most venerated men in the profession. For example; at the late meeting in Washington, one of the fathers to whom we all look with pride, a man who wears his snow-white locks with that noble grace which is only born in the consciousness of a well-spent life, and of whom a brother of equal age said publicly: "If there be an honest man in this District, there he sits." Said, in discussing this subject: "When a man receives his degree from an institution chartered by law and empowered to confer degrees, he is legally graduated and authorized to practice. To demand that he shall be re-examined before being allowed to practice, is an insult to his *Alma Mater* and an imposition to which no man should submit." We are proud to express our satisfaction at finding ourself in such company.

Admitting the need of education, where is it best to be obtained? How and by whom shall it be determined, when a student has attained it in a degree sufficient to fit him to engage in practice?

For many years after the establishment of the colleges, these questions were regarded as settled, and the immense influence thereby disclosed in the rapid advance of dentistry is known to all.

But now we have a new phase of the question: Shall these educators of our students decide their qualifications, or shall State Boards? Until it can be proven that the colleges fail to furnish needed instruction, and that the State Boards are superior judges of students' qualifications, the claim set up for the great need of such bodies to review and verify the work of the colleges is unproven. The profession, after having waited long,

will soon demand the proof. The established and recognized institutions of learning must stand, and their certificates, subject, possibly, to some reasonable oversight at the time, or directly after they are granted, must be accepted.

Dentistry is called a liberal profession and has a code of ethics. But some provisions of dental laws conflict with requirements of this code. Either the code must stand, or the laws be modified.

Speaking editorially of an able article on "Professional Ethics," the *Dental Cosmos* said, about a year ago: "The majority of writers on dental ethics have written apparently in the belief that the conservation of the interests of dentists as a class, was, or unquestionably should be, the first concern in any ethical formula pertaining to them. The same idea has largely colored the efforts which have been made with respect to dental legislation. In the latter case, all attempted efforts at dental legislation, based on proposed benefits, primarily to the class, have generally failed; because such legislation is repugnant to the spirit of the common law, whose avowed object is the conservation of the interests of the community, and not the class elements, which are tributary to it."

The article to which this editorial referred described ethics as "the art of forming, or of guiding, or of forming and guiding human character;" and stated that "the end sought by ethics is the welfare of society;" and while he explained that there was a subdivision known as "class," or "professional ethics," the author showed clearly that the cardinal principle laid down governed throughout; for, he said, "no society, no ethics;" therefore, a comprehension of the foregoing will materially assist in estimating the degree of divergence of certain laws from the true ethical standard. If a law designed to limit its benefits to one class be "repugnant to the spirit of the common law," how much more so must it seem when shown to have a tendency to confine those benefits to but a part of a class, as those who may have commenced practice prior to a given date, or the citizens of one country, to the exclusion of others; and when, to all this is added, a most conspicuous neglect of practical provisions to conserve or promote "the welfare of society," in return for the self-appropriated benefits, what is there left of such a measure to defend?

Can an educated and reputable dentist fully discharge his duty toward his community, when he gives his support to a law which prescribes, that all who may wish to share in the privilege of practicing in that community must undergo an examination, which might prove unfair to a more able man than himself; but,

which does not even inquire, whether those engaged in practice are honest and reputable practitioners, or, if they follow methods, which, if adopted by attorneys, would secure their disbarment, or, if pursued in medical practice, would cause them to be classed with the voodoo dotors and abortionists?

A man who, in early life, has testified to a proper regard for his profession by entering it "through the door of a reputable and established college," and who has passed years in honorable, conscientious and successful practice, has established a claim on the profession which they should cheerfully recognize. Though such a man generally ends his professional, and his earthly, career in the community in which he has been long established, the exigencies of life, and the force of circumstances, will sometimes force him to change his location; and any law which imposes on him an examination which might embrace questions that only a college professor or a student fresh from examinations could answer, and which have been known to force a member of an Examining Board to consult the text-books, or which would authorize a prosecution—nay, persecution—in case he should pass into an adjoining State, is not in keeping with the spirit of these days.

In the impartial manner in which the dental law of Pennsylvania is contrasted with the medical law of that State, in the *Cosmos*, its defects are so clearly set forth as to render their defense practically impossible; and while the legal right of the State to enact any laws which may be deemed proper is supported in an argument which may indicate a leaning toward an exclusive law against college graduates, the tone of the entire article is so fair, and gives such positive evidence of a desire for clean and honorable legislation, that it must command the respect even of those who may hold different opinions.

The profession stands to-day in a position of peculiar interest, for by the record of the present you will be judged by posterity. The century which gave birth to modern dentistry, and which has witnessed in it a growth unprecedented in the history of all professions, draws rapidly to its close, and those who fill an active place in the profession now will occupy a conspicuous one when the history of the present shall have been written.

Standing, as we do, on an eminence, we may contemplate the path up which our profession has made its wonderfully rapid ascent, and see the milestones along that royal road for the guidance of their followers, ornamented by the names of men who have labored well and faithfully for the elevation of our calling. Brightest of all among them will shine the names of the fathers, of our system of education, and the pioneers who spread our pro-

fessional fame around the world ; but where is one name that proclaims a wise and great lawgiver? Consider this; look forward in the dawning of the twentieth century and contemplate the advance which dentistry will make to the yet higher and broader plain which it is destined to occupy.

I am filled with an abiding faith "that before the first sunrise of the coming century the honesty, the true professional spirit, and the sound common sense of our colleagues, the world over, will have swept aside every clumsy and ill-advised measure calculated to retard our healthy growth, and dentistry will continue in the vanguard of the liberal professions, dispensing its blessings with an ever increasing bounty.

A CALL.

I feel as the young preacher says: "I have a call," and it is to point out a few serious mistakes made in placing gold crowns, and to reiterate the fundamental rules which should govern in such work.

No one should attempt crown- or bridge-work till he has studied some practical text-book on the subject (G. Evans' is good), and been under a good workman. A few days since I removed a crown which had been placed by a prominent dentist of San Francisco three years ago. A bad odor and the recession of the gum were the reasons for removing it. Such a stench I never smelled before, and I wondered why, and my wonder grew till I explored the pulp chamber and roots, and from these I drew forth cotton, rotten; decomposed food, pus, and, no doubt, three million bacteria. Such filth was never known, and soon as I could collect my senses, I was reminded of the renowned "wolf in sheep's clothing," for the crown was smooth and neatly contoured and cusped, but it covered a multitude of sins, *i. e.*, mistakes. Judging from the preparation of the tooth for the crown—which includes the filling of the roots in this case—I concluded that the dentist who did this work was either ignorant of the principles involved in such work, or else he was working only for the \$18 which was in sight, not caring for his future reputation or the comfort and health of his patient; in either case there is no excuse for such poor work. The tooth under consideration was an upper first bicuspid, which was separated from the cuspid at least two lines; the second bicuspid had been drawn years before, consequently there was free

access to all parts of the crown, and no excuse for not properly fitting. The enamel was left entire, and the crown, therefore, stood out from the neck of the tooth sufficiently to cause irritation of the gum, disintegration of cement, and thus permitting of the cotton becoming saturated with saliva, etc. This is only one of several similar cases coming under my observation in the last few years, and I begin to feel that many dentists who have criticised bridge-work have met with cases similar.

The requisites for crown- and bridge-work are: Good judgment, good theory, proper tools, and mechanical and artistic skill. Reduce the crown by grinding or scaling till a wire, tightly twisted around the tooth neck, will slip off without stretching; this wire, cut and straightened, gives the proper measure for band. After soldering the band, slip it over the crown till it touches the gum; now scribe the band and trim till the edge is contoured to correspond to the gum contour. The crown, when finished, should pass under the gum about one line, yet there are cases where it would be as well to leave the gum clear. Previous to setting, bevel the edge so that it can be burnished close to the tooth; this does away with the sharp corner, which so often irritates the gum. Use chloro-percha in the root first, then follow with a gutta-percha point of proper size, and you have a filling that will exclude all moisture for a century.

Use 32 gage gold plate for your crown, with cusps well reinforced. A properly constructed crown does not need a hammer to force it "home." *A. J. Stevens, Los Angeles, Cal.*

LIFE WITHOUT AN AIM IS INTENSE WRETCHEDNESS.—A drama has recently been written, representing a man talking with his ancestors. One of these departed spirits tells his inquiring relative that he is in hell, and his perdition is a condition of experience in which he has no interest in anything. He feels no enjoyment, no ambition, no hope, no pleasure, no passion, no desire. We are not concerned about the theology taught in this romance, but the thought that such an experience would be extreme torment is certainly correct. There are many who are passing through this experience in this life. They have nothing to do, no aim, no ambition, no enthusiasm. They drift from one form of amusement to another, seeking satisfaction in empty pleasures. The man who has nothing to live for, knows nothing of the sweetness of life.

J. M. Buckley.

AN HISTORICAL INCIDENT.

Dr. J. F. Siddall, Oberlin.

I remember at one of the meetings of the Ohio Society, twenty-five years ago, a dentist with whom but few seem to be acquainted. He arose in his seat in a somewhat excited manner, told us of his discovery, what he had done time and again, and that it was his own invention. He could extract a tooth, drive a little tack in the apex of the root and put the tooth back, and it would be all right, every time, and never ache again. All was silent for a minute or two, when a little scrubby, black-headed, dark and dirty featured, but keen, black-eyed positive-sort man, stepped forward, and with great pomp and dignity (assumed for the occasion), expressed himself "as wishing in behalf of the N. O. D. A. to give a vote of thanks to the distinguished gentleman who was a stranger to him, but not a stranger evidently to science, investigation and discovery—the brother who had so generously, so magnanimously, so freely given his great discovery to the world, asking for no letters patent, no compensation, other than the consciousness of having lived to bless suffering humanity. Such a man's services should be recognized and acknowledged by this Society, and gratefully remembered to the end of time." Up to this point of the address, the brother had been quietly sitting back in his seat serenely enjoying his glory; but the speaker went on, "Mr. President, I rejoice to have lived to see this day. We stand on the threshold of a new and great era. Hitherto, we have reached only those who have reached us. Now, I behold the coming dentist, extending his services far out in the regions beyond and all about him. The physician, the barber, and even the blacksmith, with his strong arms, is to be his ally; and every mail bag will come in town filled with bloody teeth, and there the dentist will set with his little paper of tacks and his hammer, driving tacks and returning these tacked teeth to their respective owners." The inventor by this time, was full of tacks himself, and whispered to me, "Who is that little damned fool?" I had the honor of informing him it was B. T. Spelman, of Warren, Ohio. Our friend the tack man, whose name I will not mention, had a valuable idea, and one that could be made to work both ways. Why not?

He never attended our meeting again, as he felt himself insulted. But Spelman, with all his Irish humor, couldn't help what he did any more than we boys could help laughing at the whole scene.

Yet that brother had dropped his mite a free-will offering in the hat as it passed by.

METHOD OF ADJUSTING LOGAN CROWNS.

When a band crown is wanted, without exposure of the metal, I think my method of adjusting a Logan crown will be appreciated by the profession. Grind the root to be crowned a little beneath the gum margin, as for an ordinary porcelain crown. With a fine fissure bur drill a series of small holes (about the depth your band should extend), on the face of the stump, and as near the circumference as possible; cut these together and you have a groove to fit a band in; make the band of twenty-eight gage gold, platinum, or silver, as you prefer, wide enough to reach the bottom and to project slightly beyond the face of root. With the band in position grind to a level of stump. From a piece of metal the same as the band, about thirty gage, cut a cap to fit the root end and burnish thoroughly to it, remove band and cap and place in position and solder, using as little solder as possible; replace the soldered piece and puncture or drill opening for the reception of pin. The "cap band" can then be put on the crown and a small quantity of solder flowed around the pin to hold it, or it can be adjusted without soldering.

If you desire to use a model for fitting, grind down the stump, make groove for reception of band, take impression in Melotte's compound, and run metal die, and proceed as in operating in the mouth.

I claim for this kind of a "band crown" that it is less bulky than the old style ferrule, and more cleanly, and, greatest of all, it will not cause inflammation of the periosteum. Dr. Crossland recommends this kind of a band for porcelain face crowns, which make a perfect fitting cap.

I have never had a failure from the use of this band, either from root splitting or periostitis, and any one of ordinary skill can adjust a Logan crown by this method. *T. M. Jamison.*

CARE OF INFANTS' TEETH.

William N. Morrison.

Something should be done by the dental profession to prevent so great an infant mortality. The general medical practitioners and nurses have been too neglectful of their trusts at this eventful period of infant life. They are intrusted with the care of mouth, gums and teeth of infants for too long a period. The dentist is not consulted or considered at all of any service till the teeth are

erupted, eroded, and sometimes decayed beyond repair. I will make the assertion, without fear of successful contradiction, that three-fourths of the deaths of infants under the age of three years is caused by complications arising from their teeth. Nervous tension, not relieved by normal growth or development of the parts, seeks relief in reflex action on the stomach and intestinal track.

Let us take a line of treatment which is indicated by the first motion of the little one itself when suffering from these causes. They stuff their fists in their mouths, and bite on the bed-clothing or anything which comes in reach of their jaws. "Everything goes to a baby's mouth."

Let the mother or nurse rub the alveolar ridge and plate with thumb and finger, and endeavor to expand the arch for the teeth in a natural direction of growth or development, and use the lancet frequently over the points of greatest tension.

I have known infants to be brought out of spasms by the timely use of this instrument, and many lives to be saved against the advice of family physicians and immediately interested friends, who would almost faint at the idea of having their little ones lose a drop of blood.

The care for the little ones is so deeply implanted within the hearts of all that I can but mention this to enlist the best interests of all champions of the healing art.

Do not slug them with drugs, or give one drop of soothing syrups, or so-called harmless vegetable or animal compounds, but depend on physical development.

Condensed milk teeth are not good or up to the standard.

Mother's milk first, then the milk from a healthy field-fed cow.

Give the child plenty of out-door air and sunlight; physical culture and development to all parts of the body, and in troubled dentition, special massage in the mouth.

The same line of massage treatment I recommend for children of older growth, with the second teeth by pressure with the thumb and finger or knuckles on the prominent points or teeth, within or out of the arch. They are cartilaginous and yield readily.

The Davenport Dental Society has just closed a successful meeting. Prof. Hunt, of the Dental Department of the Iowa University, was prominent in promoting its interest. Feeling resolutions were passed in memory of Dr. W. O. Kulp, one of the most successful dentists of the West.

THE RIGHT USE OF WORDS.

Though I live at the end of the world here in New Zealand, I am a constant reader of *ITEMS*, and derive much pleasure and instruction from its pages. Nevertheless there are certain blemishes which strike an English reader. I refer particularly to the Latin terminations. I say nothing of the English, which, as a living language, is subject to change, so that such expressions as "so as it will stick" instead of "so that it may stick," or "so that it will stick;" and "back of" instead of "behind," may be in process of becoming correct English; but Latin being a dead language, does not change.

As an example of what I mean, I would refer you to page 688 of the November number of *ITEMS*, where the word "alveola" occurs at least seven times.

Now I know what is meant by an "alveolus," and when the "alveoli" are spoken of, I understand the term. The adjective "alveolar" is also intelligible, and is correctly used in the fourth line from the bottom of the page, but in the line about the middle of the page, "alveola" is used in place of it.

In the page I have indicated, "alveola" seems to be used indiscriminately, both for the singular and the plural, as well as for the adjective of alveolus.

The leading position occupied by American dentists is beyond all dispute, so that one is all the more sorry to see ordinary professional terms incorrectly used month after month by men who are described as "the best authorities." Much has been said, and well said, about the "status" of the profession. We should certainly stand higher in the estimation of cultivated men if blemishes such as I have pointed out are avoided.

Hoping that these remarks may be taken in the spirit in which they are offered, I am, dear sir, yours truly,

John Greenwood, D.D.S., Fielding, New Zealand.

A NEW DENTAL LAW PROPOSED.

Dr. Charles H. Dunning, St. Louis, Mo.

During all the agitation regarding the qualifications necessary for the practice of dentistry, the following plan has suggested itself to me as being the most satisfactory of any, inasmuch as it will not only produce better dentists, but will give us a general standard of ability.

1. Have a National Board, whose duty shall be to formulate a

series of questions each year for the use of the different State Boards, and also to determine what other qualifications, if any, are necessary for the practice of dentistry.

2. Have State Boards appointed by the Governors of the different States. The boards to meet twice a year, and submit questions to applicants for examination as have been furnished by the National Board, and to grant diplomas to the successful candidates. These diplomas are to be *prima facie* evidence of qualification as required by the National Board and recognized by the laws of every State in the Union.

3. Compel all dental students to article themselves to some dentist to remain in continuous service for three years, except during the sessions of their colleges, where they must be in attendance. Thus they would get both practical and theoretical instruction.

4. Permit no college diploma to admit to practice; colleges being merely places for instruction.

By this means permits to practice dentistry would be given on merit only, and a dentist with a diploma from an Examining Board would be free to go and practice his profession anywhere he felt inclined, and we would also insure the public against the malpractice of those who are obtaining their diplomas from our colleges without sufficient knowledge of dentistry.

VARNISHING CAVITIES.

W. G. Browne, Atlanta, Ga.

The incompatibility of tooth-substance and the metals we use for filling teeth is a well-recognized fact, and it is always good practice to interpose some substance between the metal and tooth-structure, to prevent, as far as possible, any injurious effect from such incompatibility. Gutta-percha, chloro-percha, cement, and varnish, each have their merits, but none seem to have so many points of excellence as a clear resin, such as damson, dissolved in chloroform. It acts as a non-conductor of thermal changes, as well as an insulator against electrical influences. It is not readily soluble in the fluids of the mouth. Being transparent, no discoloration is shown when used, where enamel walls are thin; in fact, it prevents discoloration of the tooth from oxidation when an amalgam is used which contains metals which oxidize in the mouth. To a limited degree, it may act as a support to frail walls of enamel, especially if the filling be inserted while the varnish is in a plastic state; this refers more especially to amalgam fillings.

In the insertion of large gold fillings it is helpful, in starting

the filling, holding the first mats or cylinders of gold firmly adherent to the dentine, and makes it almost out of the question for gold fillings to come out if proper attention has been given to the method of applying the varnish and gold in the tooth when commencing the filling.

I do not for a moment advance the idea that we should depend on the varnish to retain the filling, independent of other means, but it will not be found necessary to make deep retaining-pits, but only slight undercuts in most convenient places in the cavity, thus saving the operator valuable time, and no harm can possibly result from its use, while much good must come.

I am satisfied that when the profession realizes the benefits accruing from this method it will be universally adopted.

REPAIRING RUBBER-PLATES.

Plates repaired in the following manner seldom break in the same place:

Place the halves together, take a stick of sealing wax (bees-wax is not strong enough), light it in the flame and drop it on the lingual surface of the plate. When cold you have the two parts firmly set together. Make your groove on the labial surface by cutting a little away with the buring engine and boring a few holes. Lay a small piece of rubber on, and with a hot spatula press the rubber in. Then invest the plate in the lower flask with the plaster up to the edge of the teeth. When hard enough scrape your sealing wax off. Put on the upper flask and invest. When separated you have a smooth surface and the plate of the original thickness. With your enamel chisel which must be sharp, gouge in the plate, turning the chisel from right to left, making cuts a zig-zag shape. Follow the crack and cut down nearly through them; bevel off sideways as far as you wish the new rubber to go. If you wish to make the plate thicker all over cut with the chisel the same way. Do not drill any holes or dove-tail. The new rubber will attach to the old as firmly as wood when glued. In making the plate thicker, scrape away the plaster from the surface of the upper flask, pack your rubber in and proceed in the usual way. In putting on new blocks of teeth I file the rubber sufficiently to admit of the new block being ground in. Zig-zag the rubber with the chisel; when ready put on small pieces of rubber and press with hot burnisher. Now invest in the full flask, screw the bolts and vulcanize. This saves waxing or opening of flask till done. By this method I have put two and three repair cases in one flask, thus saving much work.

TRIBUTE OF RESPECT TO THE MEMORY OF THE LATE
DR. WM. O. KULP.*

Dr. F. L. Warner, Davenport, Iowa.

MR. PRESIDENT AND GENTLEMEN OF THE SOCIETY.—It has been said by a very learned scientist and philosopher, that it is a duty we should learn to accustom ourselves to the environments by which we are surrounded. And in arising to pay my tribute of love and respect to our departed friend, we can truly say he was one of those grand and noble man that knew no such word as fail. Though the clouds of darkness many times hung thick, he could always see a bright star of hope beyond. He was one of those happy, cheerful men, that made a great deal of this life, especially in his chosen profession. It always was his desire and ambition to be a leader, and, perhaps, I can truly say that the people and the profession of this State, owe as much or more to our departed friend and fellow-worker in lifting the dental profession from the low and obscure place which it had filled, and placing it in the front ranks of the many learned professions. Dr. Kulp was a kind and indulgent husband and father, and no wish or desire of his family he did not grant if it was in his power. It was in the home and family circle that his life shown as bright if not brighter than elsewhere. It is unnecessary to erect costly monuments to mark the resting place of our great and talented men. Their sleep will be as sweet, the grass will grow as green, the flowers bud and blossom on each returning spring, the birds will sing their sweet songs of love and praise, and our friend and brother will rest the same, freed from his cares and troubles, gone to his eternal reward. Our friend had not only studied the history and progress of dentistry, but was one of the bright lights of the profession that had helped to make history, and the many students that have been graduated from the dental department of our State University, can testify of the valuable instruction they have received from his brain and hand, in the practice of their chosen profession. The University of Iowa has lost a kind, faithful instructor. This Society an able adviser, and the city of Davenport an eminent citizen. Let each and every one in this Society, so live and act that when we have departed like our friend, it can be said of us that we have left our foot-prints in helping to alleviate suffering humanity, and that the world is wiser and better for our having been here.

*Delivered before the Tri-City Dental Association.

CURRENT THOUGHTS.

SULFURIC ACID FOR OPENING ROOT CANALS.

J. R. Callahan, D.D.S., Cincinnati, Ohio.

To make the purpose of this paper clear, let us suppose we have an inferior molar in which the pulp has been destroyed; we adjust the rubber-dam, open the pulp-chamber thoroughly, take an old discarded broach, twist a little cotton on the end, bend the broach to a right angle, so that it will reach well down in the cavity; place the broach in a suitable handle, and by means of broach and cotton place directly on and about the dead pulp a drop or two of a 40 or 50 per cent aqueous solution of sulfuric acid. The solution, by a process of dehydration, will cause the pulp to shrink and toughen, so that it can with comparative ease be removed. Now by means of broach and cotton place a drop of the solution over the entrance of each canal; sometimes it will be necessary to sink a little well or depression at the mouth of the canal to get the acid to stay where it is wanted, being careful to use only round or bud drills for this purpose. Take a No. 5 Donaldson nerve-canal cleanser, bend it to a suitable angle, cut the shank short with nippers, so that the broach will fit up close to the handle and be rigid and strong; then with a pumping motion begin to enter the canal slowly and carefully. The acid will precede and follow closely the fine broach, and destroy all septic matter with which it comes in contact. Proceed till the patient notifies you of a sensation which is similar to that felt when chloro-percha goes through the foramen. Treat all of the canals in the same manner; I say all, because sometimes you will find what appear to be four distinct canals. Usually three canals will be found; the posterior root will have one broad canal, the anterior root will nearly always show what seem to be two canals. By this time the solution will be so charged with disintegrated tooth- and pulp-substance that it will hide the canals from view. Now by means of a Dunn syringe fill the cavity with a saturated solution of bicarbonate of soda; this when brought in contact with the acid solution liberates carbonic acid gas in such quantities that the effervescence will carry all the broken-up tooth- and pulp-substance out of the canal, out of the tooth on the rubber-dam, leaving a deposit of bicarbonate of soda lining the whole tooth. This deposit can be removed, if so desired, by a little sterilized water, alcohol, or peroxid, either of which will leave the

canals white and clean. If necessary to make the canals larger, place more acid in them and use a larger broach, till the canal is as large as wanted; then cleanse again with bicarbonate of soda, dry the canals thoroughly by means of paper points, alcohol, hot air, etc., and you have the cavity and all the canals thoroughly opened, thoroughly clean, thoroughly aseptic, so that you can proceed to treat or fill as you may choose. I usually fill the roots at once, but if there be signs of inflammation, I treat according to symptoms.

There are numerous cases where experience has shown this treatment to be of great value. I will relate briefly the case of Miss A., who had called on her regular dentist for relief; she was annoyed by a soreness about the roots of the right inferior second molar. The dentist, a very skilful man, tried in every way he knew to give her relief, but with all his skill and perseverance he failed to get the apical foramen open, so that the pus might escape from the apical space. Cutting through the gum and bone to the apex of the root was suggested, but the tooth had grown so sore by this time that the lady lost courage and refused to submit to the operation. On the advice of a neighbor, she called on me. By the use of the acid and broach the pus was escaping through the root-canals in a very few minutes, and the roots were filled at the second sitting. Some of you no doubt are ready to declare such treatment will ruin the tooth and damage the surrounding tissues; to which I answer, nearly five years' use in my own hands and one to three years' use in the hands of several of my professional friends has produced results far more satisfactory to ourselves and our patients than we are able to obtain by the usual methods.

Allow me to give, in a condensed manner, a few reasons for my faith in this seemingly heroic treatment:

First. The action of sulfuric acid on dentine is self-limiting, at least so nearly so as to make the operation perfectly safe.

Second. Sulfuric acid is pronounced germicide.

Third. It has been shown that sulfuric acid acts with far greater vigor on diseased than on healthy tissue.

Fourth. The acid breaks down or destroys the diseased tissue, leaving a fresh aseptic surface that nature will take care of with but little assistance; this condition obtains in the abscess and fistulous tract, as well as in the root.

Fifth. An aseptic wound will heal itself in any part of the body, if properly closed.

Sixth. The solution softens the dentine for an indefinitely short distance; the broach removes this softened dentine; the acid

instantly attacks the fresh surface, the instrument again cutting the softened surface, and so on, as long as the tooth is exposed to the action of the instrument and the acid.

Seventh. The bicarbonate of soda solution neutralizes the acid, and at the same time generates carbonic acid gas in sufficient quantities to carry the *débris* from the canals. *Cosmos.*

DESTROYING PULPS.

Dr. C. N. Johnson, Chicago.

I wish to outline a method which seems to me after four years' experience with it, to be worthy of some consideration. I prefer cobalt to arsenic. Since the cobalt probably kills by virtue of the arsenic contained therein, the question might naturally arise as to the advantages gained in its use. Experience has seemed to indicate that it is much less likely to cause pain, and that it is fully as effective as arsenious acid. In fact, the writer has found its action so perfect in this respect, that it has led him to oppose most vigorously the idea that cobalt could be applied to a pulp for twenty-four hours, and then any portion of the pulp-stump be sealed under a permanent filling with the hope that it would remain alive. Pulp will die—they will die perfectly dead to the apex after the application of cobalt. In experimenting with this agent, a record of twenty cases was kept, in eighteen of which the destruction was perfectly painless, and a subsequent experience in practice would go to show that this per cent was not unusual. In the recorded cases, seven had been entirely successful without pain, when the eighth presented with the report of having suffered excruciatingly for twenty-four hours. In fact, the doubt was expressed as to which would die first—the pulp or the patient. Investigation showed extensive nodular growths in the pulp-tissue, which accounted for the difficulty. The other failure in the recorded cases was due to the same cause, and it is a well-recognized fact that pulps containing nodular growths are difficult to manage by any treatment.

The method of using cobalt is as follows: After complete exposure of the pulp is gained, a small pellet of cotton, less than the size of the head of a pin, is moistened slightly in one of the essential oils and carefully dipped in the cobalt. The moist cotton will pick up a minute quantity of cobalt, which is then carried to the cavity, and the cotton and cobalt placed immediately on the exposed pulp. Meanwhile the assistant has been mixing some oxiphosphate. This is flowed over the cotton to perfectly seal the cobalt in the cavity, great care being taken not to cause

pressure on the pulp. In nearly every case of pulp-destruction, cement is used as the sealing agent in preference to gutta-percha. Cement admits of greater certainty of adaptation to the cavity walls, with less danger of pressure, and it has long been recognized that much of the pain occasioned in pulp-destruction is caused by pressure.

A radical departure from the usual method is now taken in regard to the length of time the application is allowed to remain. Most practitioners, if we are to believe the literature of the subject, allow arsenic to remain only twenty-four hours,—none of them longer than forty-eight. Instead of this, it has for several years been the writer's custom, where molars and bicuspid have been under treatment, to allow cobalt to remain sealed in the cavity one week. The precaution is taken in anterior teeth to remove the cobalt in twenty-four hours, through fear of discoloration, though my experience with cobalt would lead me to be less fearful of discoloration in its use than with arsenic. It seems to interfere much less with the circulation in the pulp, and would therefore not be likely to cause the extensive disruption of red blood-corpuscles and the infiltration of the coloring matter through the tooth that we sometimes see where arsenic has been allowed to remain too long in a cavity. When the cement has been removed from an anterior tooth the cobalt is washed out of the cavity with one of the essential oils, the cavity dried, and a pellet of cotton saturated with the oil is applied for one week. This is again sealed in with cement, and in this connection I wish to emphasize the necessity for using cement as the sealing agent in the treatment of anterior teeth from the time they come under the operator's care till they are permanently filled. Hermetical sealing cannot always be easily accomplished with gutta-percha, and many a case of bad discoloration may be traced to leakage of the sealing agent during the process of treatment. This fact, together with others of equal importance, argues for an application of the rubber-dam in the management of pulpless teeth in all cases where there is not absolute certainty of dryness without it.

I am aware of the criticism that may be made on the practice of leaving cobalt sealed in a tooth for one week, but my clinical experience with it gives me so much confidence in the method that I wish to argue strongly in its favor. In doing so, I should feel it uncalled for to say a word of caution as to the necessity for being perfectly assured of security in sealing the agent in the cavity, were it not for the fact that some careless reader of the paper—and there are careless readers among dentists—might essay to follow the plan without attention to this important detail.

In all my experience with this method I have never known of one case where the slightest injury has been done the gum-tissue through leakage of the cobalt under the sealing agent. In those cases which are most difficult to manage in this respect,—deep proximal cavities where the form of the gingival wall results in a sharp incline from the pulp-exposure rootwise toward the gum-tissue in the interdental space,—the gum is protected in advance of the application. If this precaution be not taken, the tendency is for the devitalizing agent to be forced down in the interdental space by the application of the sealing agent. The method of protecting the gum is by building a barrier of Gilbert's temporary stopping over the interdental space, reaching from the proximal surface of the adjacent tooth over the gum-septum and along the gingival wall of the cavity to near the point of pulp-exposure. Good adaptation to the gingival wall may be gained with Gilbert's stopping, not only on account of the pressure which is permissible against this wall, but because the preparation gets very soft and adherent with little heat. When the gum is protected by this bridge, the application of cobalt is made and sealed in position with cement. The latter becomes firm and rigid, preventing any dislodgment in mastication which might occur if the temporary stopping were used throughout.

The objects gained by leaving the devitalizing agent in a week are mainly two. The destruction of the pulp seems to be more complete when this is done, and the plan saves the time and expense, both to operator and patient, of an extra sitting. Seldom is a pulp in a condition to be readily removed after the application has been in twenty-four or even forty-eight hours, but it usually is at the end of a week. Thus, when the agent is removed in twenty-four hours, the cavity must be resealed and the patient given a subsequent sitting for the removal of the pulp. The saving of this one sitting for each case of pulp-destruction amounts, in the aggregate, to a considerable item in a year's practice, and wherever the operator can consistently save the time of his patient, and still do the patient the best service, it is his duty to do so.

At the second sitting the rubber-dam is applied, the cement removed, and the cobalt washed out by flooding the cavity with absolute alcohol. This is then evaporated with the chip-blower till the cavity is dry, when a sharp bur is used to thoroughly open up the pulp-chamber. In doing this, the bur usually lacerates and cuts in shreds the main body of the pulp contained in the chamber, and this, together with the *débris* from the bur, is again washed out with alcohol. The openings of the canals can

readily be discerned by evaporating the alcohol to dryness, and in passing I may say that the most efficient means of discovering hidden openings of small or badly situated canals under any circumstances is to flood the pulp-chamber with alcohol and use the air-blast till the chamber is quite dry. The alcohol will usually wash out any *débris* that may be plugging an opening in pulps long dead, and in any event will at once disclose the position of the opening by the difference in color between the *débris* and tooth-tissue when dry. This plan has proved of the greatest service to me in at once disclosing the whereabouts of hidden openings which had long puzzled me on account of their unusual position, and which the broach had failed to find.

After the bulbous portion of the pulp is removed, the extraction of the portion in the canals may be facilitated by first absorbing as perfectly as possible the moisture from the remaining pulp-tissue. Alcohol, on account of its affinity for water, aids materially in this, and I have recently been employing it in the form of spray for this purpose, and also for drying pulp-canals previous to filling. The kind of apparatus used for producing the spray is one of the many devised for obtunding sensitive dentine, and was invented by Dr. Rust, of Chicago. I have found greater use for it in pulpless teeth than in sensitive teeth. Prior to the use of this instrument it was my practice to evaporate the alcohol with hot air, but my conviction is that with the spray we get an equal or greater degree of dryness without the unpleasant, and possibly dangerous, effect of the heat. My confidence in its efficiency was recently much strengthened by an unforeseen occurrence. I had just removed the bulbous portion of the pulp from a lower molar, and found the canal contents quite moist and somewhat sensitive to the broach, when some one requested very urgently to see me for a moment in the reception-room. I instructed my assistant—who had meanwhile been preparing the spray apparatus for use by heating the metal bulb—to direct the spray on the open pulp-chamber while I was gone. I was detained much longer than I had anticipated, but the assistant faithfully kept up the pumping during my entire absence. When I returned I found the remaining pulp-stumps so thoroughly desiccated and shriveled into leathery strips that there was not the slightest sensation in them and no difficulty in their removal. It will usually be found where pulps are moist and tear easily with the broach without readily coming away from the canal, that if dried in this way they will become tougher in fiber, smaller in caliber, and can be easily removed. Again, in those occasional cases where the pulp-tissue is sensitive to the pressure of the broach, even after the

application of the most powerful devitalizing agents, we may control the difficulty in the same way. Pulp in this condition are never sensitive to the application of the spray, and in fact the most extreme changes of temperature do not seem to affect them in the least, however sensitive they may be to the touch of the broach. Let such pulps be thoroughly desiccated by the use of alcohol as before mentioned, and it will be found that all sensation will be gone and the pulps in condition to be removed painlessly.

After the extraction of the pulp the canal is flooded with an antiseptic to destroy any putrefactive germs which may have gained entrance to the canal. This is wiped out as perfectly as may be with absorbent cotton on a broach, and the canal again flooded with alcohol, which is in turn evaporated with the spray apparatus. When the canal is sufficiently dry it is filled, this being one of the cases where the writer is a believer in immediate root-filling.

Cosmos.

DISINFECTION OF PUTRESCENT PULP-CANALS.

Dr. D. W. Barker says: The materials introduced for this purpose within the last few years contain a surplus of oxygen, which, when brought in contact with any material which has a strong affinity for oxygen, as pus, causes the pus products immediately to change their nature. These materials, however, have some disadvantages. They are almost all extremely caustic. That objection applies to the strong sulfuric acid which is now much used. The materials which I prefer for that purpose are two very simple ones, and by their union in the pulp-canal they set free the nascent oxygen. They are permanganate of potash and peroxid of hydrogen. When brought in contact in the canal the effervescence is very violent. The best way to do it is to take a Donaldson bristle and dip it in the powdered permanganate of potash, and then with a little syringe drop a little peroxid of hydrogen on it. It produces on the hand only a slight warmth. If the two are made in a solution the union is much more violent, amounting almost to an explosion, and the effect is much more noticeable. It does not stain the teeth. I have been using it for some time. The teeth so treated show a remarkably quick cure. I have used this method, and after two or three applications the tooth fails to show the characteristic foaming when peroxid alone is introduced. I have attempted to close up and fill them in a week or ten days, just to see how quickly it could be done, and with very good success.

Exchange.

CURIOUS PROPERTY OF ALUMINUM.

Charles Margot, preparator at the physical laboratory of the University of Geneva, has recently made a curious discovery concerning aluminum. He has found that if glass be rubbed with a piece of this metal, very brilliant markings will be obtained that no amount of washings will cause to disappear. This property of aluminum of adhering strongly to glass, and to silicious substances in general, is especially manifested when the rubbed surface is wet with water or simply covered with a stratum of aqueous vapor.

Mr. Margot has constructed a small aluminum wheel which revolves very rapidly and with which he makes designs on glass after the manner of ordinary engravers. The designs are metallic, chatoyant and brilliant, and, by burnishing with a steel tool, they may be even made to have the appearance of metallic inlaid work. The adhesion is absolute. But it is necessary to see that the glass as well as the aluminum point are perfectly clean.

This property of aluminum permits of immediately distinguishing the diamond from glass. While, in fact, aluminum leaves a very apparent trace on crystals of the latter, it has no action whatever on the diamond.

American Druggist.

BRICK DUST MORTAR.

The use of brick dust mortar as a substitute for hydraulic cement, where the latter cannot be obtained, is now recommended on the best engineering authority. Experiments made with mixtures of brick dust and quicklime, showing that blocks of one-half inch in thickness, after immersion in water for four months, bore without crushing, crumbling, or splitting, a pressure of 1,500 pounds per square inch. It is considered, too, that the addition of even as small a proportion as one-tenth as much brick dust as sand to ordinary mortars is preventive of the disintegration so often characterizing mortars used in the masonry of public work. The use of brick dust mixed with lime and sand, is said to be generally and successfully practiced in the Spanish dominions, and is stated to be in all respects superior to the best Rosendale hydraulic cement in the construction of culverts, drains, tanks, or cisterns, and even roofs, whether for setting flat tiles or for making the usual tropical flat roof. The proportions used there in the manufacture are, proximately, one of brick dust, one of lime and two of sand, mixed together dry and tempered with water in the usual way.

Southern Architect.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

Question 182. *Three years ago a lad of fourteen years received a fracture of the cutting edge of right upper central. Nothing was done at time of fracture, and with the exception of a little sensitiveness from thermal effects, there was no apparent trouble. A year after accident there appeared a hard tumor on right temple, at edge of hair. The tumor was not painful at first, but six months later it became so. The boy was treated externally and internally, and at times the tumor would nearly disappear, but suddenly return, attaining the size of an English walnut. This continued over a year, when pain appeared in tooth. I was consulted, and examination proved pulp dead in the fractured tooth. What treatment is advisable, and is tumor on temple caused by the dead tooth? There is no abscess at apex of root.*

Do not believe tumor caused by tooth. Should treat for pericementitis.

G. W. Dunbar, Buffalo, N. Y.

The tumor must have been an enlarged lymphatic gland, caused by absorption of septic matter from the tooth.

W. T. Binzley, Napoleon, O.

I fail to see any positive relation between dead central and tumor. There being no evidence of discharge from the dead tooth, and no abscess at apex of root, I should cleanse cavity, treat tooth, watch results, and if everything is favorable at end of ten days, fill root with chloro-percha and finish with gold contour.

J. P. Collom, Midland, Tex.

I think the tooth has nothing to do with the tumor. From your description the tumor must be of a malignant type, either of a scrofulous nature or, perhaps, a fall or bruise on temple was the primary cause. As you say there is no abscess at apex, there is, consequently, no burrowing of pus to the tumor, and so far as I can see from description, there is no connection between tumor and tooth. Would treat tooth as I would any other tooth with dead pulp, and fill root with chloro-percha or phosphate cement, and build up with gold.

T. M. Allen, Birmingham Medical College.

Question 183. *I have recently seen two cases of sickness caused by the accidental administration of pyrozone, five per cent. etherial solution. The first was a young man being treated for septic infection from having a tooth extracted by a traveling quack. On syringing the pocket with pyrozone, a drop or two was accidentally swallowed, and he immediately complained of feeling dizzy and sick at the stomach, with profuse perspiration. He remained in this*

condition a half hour. The second was a young lady to whom less than one minim was administered hypodermically through mistake. Her symptoms were similar to the above, only more pronounced, and at the end of an hour and a half was barely able to leave the office. It showed little or no effect on the pulse. Can some one explain why pyrozone should have this effect, and what should be done in cases of this kind?

As H_2O_2 when pure is non-irritating, and as ether can be injected hypodermically in quantities of ten to fifteen minims without unpleasant effects, the pyrozone used in this case must have been impure or contaminated with some irritating substance.

W. T. Binzley.

I have had little experience with pyrozone, except in bleaching teeth, with a twenty-five per cent solution, and washing out root canals with a three per cent, and then I invariably use the rubber-dam. In cases of septic poison, I prefer phenol-sodique. I can not advance theory as to cause of trouble.

T. M. Allen.

Question 184. *Girl three years of age, in good health, and all temporary teeth erupted. Left upper central is badly decayed on three sides. What shall I do with it?*

If possible, fill with cement or gutta-percha. G. W. Dunbar.

If possible, fill tooth; if not, extract as a last resort, to prevent suffering.

J. P. Collom.

Would fill with cement, or, if tooth is so badly decayed that pulp is destroyed, would fill root with Gilbert's temporary stopping, to preserve root till about time for eruption of permanent tooth. Would watch the case after filling and extract root soon as necessary, as a filled root will not absorb like a live one.

W. T. Binzley.

I would excavate well as possible, and not encroach on the pulp. Fill with onyx cement, or make crown of gold—about No. 40—to cover entire crown, and cement to place with onyx cement. I give the preference to this cement, because it resists mastication better than any I have tried, is not affected by fluids of the mouth, and being very sticky, adheres to cavity and does not require deep undercuts.

T. M. Allen.

Question 185. *What can I use to prevent trouble in filled teeth, due to sensitive dentine? I have used nitrat of silver, various oils, carbolic acid, etc., but in spite of all, some filled teeth give trouble when anything very hot or cold is taken in the mouth.*

The trouble can be prevented by a non-conductive tooth lining, and the shape of cavity, depth of decay and location are deciding factors in the selection of a proper lining. The use of cocain and a temporary filling of oxid of zinc will overcome this trouble in many cases, but we are not always favored with time, and patients often neglect to return for permanent fillings. In shallow cavities, copal, sandarac, prepared varnishes or linings, are often used to good advantage; while in deep-seated cavities the use of chloro-percha, gutta-percha, sheet tin, card-board, asbestos, and other non-conductives, often anchored with chloro-percha cement or varnish, are used. In shallow and ill-shaped cavities the bulky cappings can not be

used without weakening the filling, and a thin varnish lining, with cement covering, is often preferable, as undercuts or retaining pits can be made in hardened cement that will retain a thin covering of gold or amalgam, producing a substantial filling free from thermal effects. In using a lining as last stated, the preparation should be thin, cavity wiped with alcohol and thoroughly dried with hot air before applying varnish lining, and after application it should be forced in the pores of tooth with hot air. In cases where fillings depend much on adhesion of cement, all surplus lining should be removed that the cement may have anchorage to tooth substance, and not to tooth lining. We depend in these cases on the lining entering the tubuli to prevent thermal shocks, which are often conveyed through many of our supposed non-conductive cements.

Question 186. *I wish you to diagnose the following for me. My wife has been losing her teeth quite rapidly. The teeth are pure and white; no decay; no cavities. They begin with soreness at root with painful gums—somewhat swollen and small amount of pus. The gum loosens from the teeth, but no tartar or scurf. The teeth have been cleaned twice a day for years, and when they are removed I find them ulcerated—not abscessed—pulp dying or dead, and canals containing pus. The gums are unusually light pink and appear very healthy. I am unable to save one of these teeth.*

The general health is quite poor, and there are at times spasms of the muscles, causing the teeth to come together with such force as to awake us from sound sleep; is as liable to occur in day time and causes severe pain for the moment. Age, forty-five.

How am I to treat this case? I am anxious to save these teeth; it seems cruel to extract them.

Question 187. *A pretty miss of fourteen met with a misfortune five years ago and lost the right upper central. The space has closed about one-third; adjoining teeth are sound. Will you suggest the procedure by which the most practical results can be obtained?*

Implantation.

D. W. Barker, Brooklyn, N. Y.

Cut off left central and put on porcelain face Richmond crown, using porcelain facings of sufficient width to fill space between laterals. Make crescent-shape saddle to fit mesial surface of right lateral to assist in supporting right central.

W. H. Bailey, Menomonie, Wis.

Much depends on circumstances and conditions which a personal examination alone would disclose. Possibly a small clasp plate carrying an artificial central tooth, made to slightly overlap the remaining natural central to make it appear nearly of the same width, would prove satisfactory.

William H. Truman, Philadelphia, Pa.

This is a case I should want to see and study before deciding or suggesting a procedure. At this age we must consider carefully the future welfare of the entire set. In this case it might be well to let nature continue to close the space.

J. A. Collier.

Widen the space to correspond with left central. (1) Insert small and

narrow plate with clasp to bicuspid. (I consider this best, being the most unsightly and no mutilation of the sound teeth.) (2) By bridge anchored with gold fillings. (3) Dummy cemented to lateral and central by bands. (4) Cut off central and bridge.

I. B. Archer, San Juan, Cal.

I would enlarge the space by wedging so as to admit a tooth to compare favorably with the left central. Back the tooth and attach to lateral gold backings, adjusted to the adjacent lateral and central, to which gold backinging I had soldered a lug to fit in mortises, cut in adjacent lateral and central, and cement in place.

W. E. Andrews, M.D.S., L.L.B., New York.

An intelligent opinion could scarcely be given of this case without personal examination. If possible, I should widen the space and insert a tooth by one of the well-known methods. Room may be had by expanding the arch. A small "telescope" gold plate might be best. If decision should be in favor of a bridge I would open space and hold it thus for a year or two before bridging.

E. P. Beadles, Danville, Va.

Cut off left central, put on Richmond crown and suspend to right central. By so doing you can put in two small incisors of even size. If patient cannot afford the expense, or values the left central so much that objection is made to cutting it off, insert a small plate with a lower central, shave the left central and right lateral, and wedge the false tooth in.

Richard Kessel, Buffalo, N. Y.

Question 188. *A patient thirty years of age, in good health, has, in the upper arch, an eminence (resembling the cuspid eminence) above a space occupied at one time by the first right bicuspid. A small fistulous opening is perceptible; no pain in the immediate vicinity; tension of the mucous membrane and soft tissues; suffers occasionally with pain around the infra orbital region and all teeth are present but the first bicuspid, which was extracted six years ago. Please advise what steps to take.*

Undoubtedly there is a portion of the root of missing tooth in there. Extract it.

D. W. Barker.

There is a tooth imbedded in the eminence. I should extract it if patient is troubled much.

W. H. Bailey.

Look for a broken-off bicuspid, necrosed bone, or cyst. Use local anesthesia, lay the gums open and probe.

Richard Kessel.

A better history of case needed for diagnosis. If you dissect away soft tissue and cut in bone sufficiently to find cause of trouble, the proper treatment will be indicated.

E. P. Beadles.

Ascertain if the antrum is punctured. If so, treat antiseptically. If not, treat with tincture of iodine and a 10 per cent solution of chlorid of zinc, after having satisfied yourself there is no sequestrum.

W. E. Andrews, M.D.S., L.L.B.

The question omits important data. Was the bicuspid dead and abscessed at time of extraction? And if so, has fistulous opening remained perceptible during the six years? Follow up the opening, and it is likely you will find the antrum involved. Search carefully for necrosed bone on the way up.

J. A. Collier.

Open up and locate source of pus. May be abscess, necrosed bone or antrum trouble. At any rate, find origin of trouble, cleanse thoroughly with warm water and salt, followed by H_2O_2 . Pack sinus with aromatic sulfuric acid and let remain several hours on cotton. Repeat at intervals of two or three days till cure is effected. If any dead bone, remove and scrape thoroughly.

I. B. Archer.

Any advice based on the symptoms and conditions noted in question, would be mere guesswork. They equally well suggest a "thousand and one" differing abnormal conditions. The diagnosis and care of such cases depends so largely on that which an experienced eye sees, and a skilled touch feels, I do not feel free to make any suggestions other than to advise a consultation at which the patient can be present, with some one accustomed to treating such cases.

William H. Trueman.

Question 189. *Do you think filling the deciduous teeth interferes in any way with the absorption of roots? If so, why and how?*

No.

W. H. Bailey.

No.

I. B. Archer.

Decidedly not.

Richard Kessel.

With live pulps? No. Without live pulps? Am not in the habit of filling roots of deciduous teeth.

D. W. Barker.

I do not think that filling these teeth interferes with absorption of roots, and if it does, would still continue to fill them for obvious reasons.

E. P. Beadles.

No. But the death of pulps in deciduous teeth interferes with absorption of roots, and in filling a deciduous tooth the operator can not be too careful in his encroachment on the pulp.

J. A. Collier.

Most decidedly I think deciduous teeth should be filled and pulps conserved where possible, not only for the physical comfort of the little one, but that the physiological process of absorption may not become a pathological process of suppuration and exfoliation or compel recourse to steel assistance.

W. E. Andrews, M.D.S., L.L.B.

I cannot imagine that the filling of a deciduous tooth would interfere in the slightest degree with the absorption of its roots. What effect the filling of pulp cavity and canals with a metallic or other indestructible root filling might have I do not know. I have never done so, and do not now recollect ever having seen a case in which it has been done.

Question 190. *What is the best all-around crown for general practice, and the best attachment?*

Logan, with band, when deemed necessary.

I. B. Archer.

For grinding teeth I would say gold. The conditions surrounding the case will suggest the best attachment.

J. A. Collier.

(a) Richmond crown for front teeth. Gold crowns for side and back teeth. (b) Cement. Line the inside of gold crowns with gutta-percha.

Richard Kessel.

The Logan crown properly fitted and set with good cement for the twelve front teeth and a gold shell crown for bicuspid and molars, also set with cement.

W. H. Bailey.

For molars and bicuspid (except first upper bicuspid), gold crowns, each

made expressly for the case in hand, and made to fit the root—not a plaster model. For first upper bicuspid and six anterior teeth (upper and lower), Richmond crown. For attachment, a good slow-setting oxiphosphate cement mixed thin and protected from saliva till quite hard.

D. W. Barker.

The best crowns for lower bicuspid and molars is the gold cap; the best for upper centrals, laterals and canines (where experience does not restrict), is the porcelain-faced cap with dowel. For a cheaper and very practical crown the Foster or Bonwill with How screw post set in Smith's oxiphosphate has given me great satisfaction for many years.

W. E. Andrews, M.D.S., L.L.B.

The best all-around crown for posterior teeth is the hollow gold crown. The best for the anterior is a banded root with entire porcelain crown—porcelain fused on the lingual side as gold is used on the Richmond crown. For attachment, I know of nothing better than good cement. We need a tooth made of something better than porcelain. The English tooth is the best I have been able to get. I believe a tooth might be made of asbestos which would be superior to anything we have.

E. P. Beadles.

For an all-around crown, one suited to a large number of cases, and that will give fairly satisfactory results, with a minimum of expense and skill, either the Logan or Bonwill are excellent types. Both have disadvantage of sacrificing the strength of the root and failing to afford it the same protection from accident or decay, as do the banded or collar crowns. The band or collar crowns, the metallic portion platinum, soldered with pure gold, and the joint between the tooth and cap filled and covered with an easily fused porcelain, skilfully adjusted, is perhaps as near the ideal as we have yet attained. For the attachment of all porcelain crowns I prefer the zinc phosphate cement. In other cases I prefer gutta-percha on account of its permitting ready removal for repair in case of accident.

William H. Trueman.

TREATMENT FOR CLEFT PALATE.—An interesting article by Eugene F. Hoyt, M.D., on the successful treatment of cleft palate, appears in the current number of the *Brooklyn Medical Journal*. Cleft palate is a malady, it may be seen, which not only causes great physical suffering, but acute mental distress. There are two methods of treatment, namely, surgery, which causes great pain and suffering, and secondly, by means of mechanical devices.

After an intelligent review of the subject, the article calls especial attention to the invention of a flexible palate, made some thirty years ago by Dr. Norman W. Kingsley, whose office is now at 115 Madison avenue, New York City. It appears that in cleft palate there is an absence of tissue, and however closely the sides of the cleft may be brought together and united, perfectly normal speech can rarely be produced. The artificial palate replaces the missing tissue. It is perfectly flexible and may be so adjusted as to be brought under muscular control, and this enables the patient to articulate with ease and naturalness.

Scientific American.

PRACTICAL POINTS.

Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Infected Root Canals.—Dr. de Marion, of Paris, France, has treated a large number of infected root canals by filling them with cotton saturated with a 33 per cent solution of formol* hermetically sealed in, and in no instance as yet has there been any subsequent inflammatory action.

A. E. Mascort.

We have made a limited number of tests of formalin in the class of cases noted by Dr. Mascort, with most satisfactory and promising results.

Ed. Den. Cosmos.

To Deodorize Iodoform.—

R.—Carbolic acid..... 1 part.
Oil of peppermint..... 2 parts.
Iodoform..... 197 parts.

N. Y. Med. Journal.

To Get a Natural Gum Color in Vulcanite Plates.—

Bleach pink rubber by immersing it in alcohol for a time.

H. B. Meade.

Soft Solder in Bridge-work.—In making partial plates, have the pins perfectly straight, that the teeth may be removed while the plate is invested, and the backings soldered to it as usual; then drill holes the size of the pins; cover the pins and sockets with a solution of zinc chlorid; readjust the teeth, and attach them with soft solder by means of a soldering iron. Done with very little trouble, and permits easy repairs.

F. T. Van Woert.

Pulp Devitalization in Posterior Teeth and Immediate Root-filling.—Cobalt applied to the well-exposed pulp, on a pellet of cotton dipped in one of the essential oils, and sealed in for one week with oxiphosphate cement flowed over the cotton, is less likely to cause pain, and is fully as effective as arsenious acid. After one week apply the rubber-dam, remove the cement, wash out the cobalt by flooding with absolute alcohol and evaporating with chip-blower. After removal of bulbous portion of pulp, absorb all moisture from remaining pulp-tissue by spraying with alcohol till dessicated, when it can be removed easily and painlessly. Flood the canals with an antiseptic, wipe out with absorbent cotton on a broach, flood with alcohol again and evaporate to dryness, and it is ready for "immediate root-filling."

C. N. Johnson.

Opening up Root Canals.—Adjust rubber-dam and apply a drop or two of a 40 or 50 per cent aqueous solution sulfuric acid

* Formol—formil aldehyde, essentially the same as formalin.

to shrink and toughen the pulp. After removal of pulp, place a drop or two of the sulfuric acid solution over the mouths of the canals, and with a No. 5 Donaldson nerve-canal cleanser, enter slowly and carefully, with a pumping motion. When all the canals have been thus treated, flood the cavity with a saturated solution of bicarbonate of soda. Effervescence will carry all broken-up tooth and pulp substance out of the canals and cavity on to the rubber-dam; cleanse with sterilized water, alcohol or peroxid; dry the canals and fill.

J. R. Callahan.

Electrolysis in Arresting Erosion.—It has occurred to me that the diseased glands (labial) can be removed or destroyed by electrolysis. * * * The lips could be easily everted, and by employing a bent electrode the orifice of the glands could be penetrated and their decomposition brought about, with a total cessation in the discharge of any secretion.

N. P. Brubaker.

Root Canal Filling.—After thorough cleansing, complete the drying-out process by the application of absolute alcohol, followed by a mixture of ether two parts, alcohol one. Fill the canals with celluloid dissolved in ether and alcohol.

Geo. S. Allan.

Convenient Application of Nitrate of Silver.—Dip silver wire in nitric acid and insert in the cavity. The action of the acid on the silver forms the nitrate *in situ*; the wire being easily directed, the application is made to the exact place desired.

A. M. Holmes.

Treatment of Abscess to Force Medicament Through Fistulous Tract.—Adjust rubber-dam, prepare the cavity and dry it, and fill with carbolic acid. With a piece of soft India-rubber, as near the shape of the cavity as possible, and a little larger; and a blunt instrument, force the medicine through the fistula.

J. N. Crouse.

Obtunding Sensitive Dentine.—Dry the cavity thoroughly, using warm air and alcohol alternately. Then apply a 10 per cent "chloroformic solution of cocain," which will be absorbed by the dentine anesthetizing it perfectly. Chloroform applied on cotton hastens the absorption of the cocain.

Geo. F. Eames.

Filling Proximal Cavities.—When the cavity extends under the gum, use gutta-percha for that portion of the filling, making the remainder of cement.*

E. C. Blaisdell.

Dressing for Aching Pulp.—Menthol combined with eugenol makes an excellent dressing for an inflamed and aching pulp.

C. B. Rohland.

* When far enough under the gum to be beyond the reach of thermal changes, use amalgam with oxiphosphate over it.

Dr. Grant.

Painless Pulp Devitalization—Fill a depressed disk with campho-phenique, to which is added enough aristol to make a syrupy mass; add two or three crystals, cocain-hydrochlorate, and in the center of the disk, thus filled, put about a one-hundredth grain of pure arsenic (white oxid of arsenicum). The cavity having been properly cleansed and dried, invert the disk and contents over the exposure and insert temporary stopping, carefully avoiding pressure.

Chas. Keyes.

Treatment of Diseased Pulps in Very Young Teeth.—In temporary teeth, where the application of arsenious acid is unsafe, crystals of nitrate of silver may be applied directly to the pulp, cauterizing the surface only, without involving the entire pulp in inflammatory conditions.

A. M. Holmes.

Obtunding Sensitive Dentine.—Absorb all moisture possible by applying absorbent cotton, then lay on a piece of cotton saturated with cocain and allow it to remain for a moment or two. It will palliate "in a larger proportion of cases than any other agent I have ever used."

Thos. Fillebrown.

Pulp Capping.—Clip a disk of suitable size from the gummed portion of an envelope; moisten with carbolic acid, and place in the bottom of the cavity.

Jno. S. Thompson.

Aseptic Mouthwash.—

R.—Zymocide	fl. oz. j.
Eucalyptol.....	fl. drs. ij.
Glycerin.....	fl. oz. j.
Alcohol oil.....	fl. ozs. iij.

J. Henry Morgan.

Persistent Hemorrhage after Tooth Extraction.—Depress the action of the heart and promote contractility of blood-vessels by the administration of veratrum viride, gtt. iv., in a tablespoonful of water every three hours. Twelve drops generally sufficient.

Geo. A. Sullivan.

To Secure a Thin Rubber-plate.—Melt base plate wax; having saturated the model with water, dip it in the melted wax, lifting it out in such a manner that the surplus wax will flow off easily. Repeat the dipping till you have the desired thickness of wax with a smooth, even surface, wax carefully around the teeth; after articulation wet the piece again and immerse in the melted wax. When cool, peel the wax from the teeth, trimming around them carefully, and it is ready for the flask. Will need only the brush wheel to finish it.

A. N. Dick.

Selecting Teeth for Metal-plate or Crown-work.—Use the perpendicular rather than the cross-pin teeth; they are less

liable to crack in soldering; do not let your dealer give you any thing else.

L. P. Haskell.

To Keep Your Burnishers in Good Condition.—Procure a very thick piece of sole leather, and with a sharp knife cut a small groove the whole length of the piece. Sprinkle rouge in the groove, and rub your burnishers in the groove till perfectly bright; rub a little hard white soap on the surface of the filling before using the burnishers, and use the burnishers with a light touch—pressure is unnecessary.

R. B. Winder.

To Set Gold Crowns with Gutta-percha.—Roughen the inside of the crown, and have a vent in case of surplus. Heat crown and gutta-percha on a tray. With warm instrument spread a thin coating of gutta-percha on inner surface of crown. Dry surface of tooth with alcohol and hot air blasts, wipe off with a germicide, and coat with eucalyptus. Apply a thick solution of chloro-percha around the neck of the tooth, and having the crown as hot as can be handled with the fingers, drive home on the tooth. The eucalyptus, chloro-percha and gutta-percha will form a thick, creamy mass, filling all spaces between crown and tooth. In case of necessity the crown is readily removed by the application of heat.

G. V. I. Brown.

Sterilizing Instruments.—A saturated solution of the silico-fluoride of sodium, which is a cheap drug, free from taste or odor, can be used to disinfect instruments after they have been cleaned.

A. W. Harlan.

How to Use Copper Amalgam.—When the amalgam is heated carefully and thoroughly crushed and rubbed in the mortar, to eight grains of the copper amalgam add one sheet of the fine silver leaf used by gold-beaters (less than a quarter of a grain in weight). There will be no discoloration of the amalgam, and it gets much harder and wears better, with no failure around the edges.

C. F. W. Bodecker.

Erosion.—Nitrate of silver, when applied to an eroded part of a tooth, is decomposed; the oxid of silver—an insoluble and inert substance—is deposited, which protects and relieves hypersensitiveness, antagonizes the action of morbid influences, and assists nature to arrest the disease.

Geo. J. Friedrichs (1879).

Second Arsenical Application.—When the effects of an application of arsenious acid fail to reach the whole extent of the pulp, remove the devitalized portion and apply a minute portion of a paste composed of one part arsenious acid to ten parts iodoform moistened with campho-phenique.

Chas. Harker.

ITEMS.

Dr. A. Ledlie, of Belfast, Ireland, relates two instances of a partial set of teeth being swallowed and successfully voided per anum.

* * *

Who is the man now first to furnish carborundum, to take the place of steel burs and drills in grinding natural teeth? It cuts faster and hurts much less than metal. *Vive la carborundum!*

J. W. Greene, Trenton, Missouri.

* * *

Thomas S. Ingersoll, a well-known cotton merchant, died recently from blood poisoning, caused by ulceration of a decayed tooth. He was born here January 14th, 1851, and was a son of the late A. J. Ingersoll.

New Orleans Picayune.

* * *

I read the ITEMS, and like the practical way it has of putting things. I have a practical way of drying out a pulp canal. After wiping out the canal with alcohol, I place a nerve broach as far up in the cavity as I can get it, and with a hot air blower draw in the flame of a spirit lamp and blow the hot air on the broach just where it enters the canal; do this several times till the broach gets hot, and it will dry out the canal thoroughly.

R. R. Vaughan, D.D.S.

* * *

A CURIOUS COMBINATION.—The *British Medical Journal*, commenting, in a recent issue, on the unveiling of the memorial tablet of bronze to the memory of Dr. Horace Wells, claims priority in the discovery of the anesthetic properties of nitrous oxid, for Sir Horace Davey thus curiously combining in one (by a probable typographical error) the names of Horace Wells and Sir Humphrey Davy, each of whom is doubtless entitled to a share in the honor, though to Horace Wells belongs the greater honor of practically understanding the blessings of anesthesia on suffering humanity.

W.

* * *

A fairly intelligent man cannot fail to pick up stray crumbs of knowledge even from watching an average operator; whilst the benefit to be derived from the study of the manipulations of an expert are incalculable. Little points of weakness, dexterity, time-saving and pain-saving expedients are minutia, which apart from

the practical principles of any particular operation, should be observed and mentally digested. This method of self-education is, of course, principally associated with clinical work; but the intercommunication of thought on professional matters is apt to be forgotten or neglected in its literary aspect, much to the detriment of ourselves and our patients. The dental world would surely be the gainer, did we but exert ourselves in following the example of our medical brethren; by adopting a fuller and franker interchange of opinion on the principles and details of our daily practice.

Dental Review.

* * *

TEETH AND WEATHER.—“I can always tell when a storm is coming,” says a Philadelphia dentist, “without consulting either a barometer or the weather forecasts. My patients are the best barometers in the world. The teeth are peculiarly affected in damp weather, particularly bad teeth. When strangers begin flocking to my office, complaining of toothache and pains in the jaw, I know we are going to have a spell of bad weather. A good bit of it is neuralgia, but it is a sure sign. This rush of business keeps up till the stormy weather sets in, and, when business falls off, I know the storm is abating, and that we will soon have fine weather. When toothache patients are few and far between, you can rest assured that a season of pleasant weather is at hand.”

New Orleans Picayune.

* * *

A lady patient, blonde, of nervous temperament, twenty-seven years old, complained of an upper left first molar. It had been filled by a dentist eight years ago. She complained of neuralgia and great pain at times from hot or cold water. It was also sensitive to touch, especially on the surface of the center of the gold filling. This occupied the entire grinding surface. After thorough testing, I advised her to have the nerve devitalized. I found the gold only a covering; the main portion being filled with cement, which was still in good condition, but very sensitive. I devitalized and extracted the pulp, and filled the roots with chloro-percha, then crowned with cement and capped with gold. Two years have passed, and now it is the same as at first. To touch the center of the gold causes excruciating pain. The left eye pupil is very small, while the right is very large. She has been to the best physicians here, but not to a specialist, to have her eyes examined, but they could find nothing. I would like to know how to relieve her.

G. E. Purnell, Guadalajara, Mexico.

EDITORIAL.

HE IS A GOOD DENTIST—BUT.

Oh, do not be a dentist with a but to it. Look to yourself. Can you not see yourself as others see you? Why be blind to your faults, and especially to serious hindrances to success?

A nice and intelligent lady once entered my office, saying: "Doctor, why is it you dentists do not make yourselves unobjectionable in your appearance, surroundings and habits? It seems to me a dentist who is not a gentleman, a scholar, and skilful practitioner should seek other employment."

"That is a pretty high standard," I replied.

"Not too high," she continued. "It is neither difficult nor unreasonable for a gentleman to be a gentleman, and who but a gentleman should be a dentist? As for scholarship, he ought to have attained that before entering the profession; it should have been the foundation for his professional studies and manipulation; yet some seem to come to the dental chair direct from the plow, the anvil, and the hod; dirty, coarse, and uncultivated. The very idea of dentistry being a profession implies that the dentist is a professor—a learned man, a teacher. As to skill, he is certainly out of place if his brains, and his muscles, and his very finger tips are not bred to discipline, accuracy and intelligence."

Is this standard too high? We will all agree it is not; that is, when applied to dentists in general. But how is it when applied to ourselves? Oh, that we could see ourselves as others see us. But would not the sight so abash many of us, that we should lose our self-respect? I fear some of us, with shamefacedness, would pass out of the profession.

Would it not be grand if we could be a dentist without a "but" to it? How we should shine with honor and gold. And are we sure our "but" is a fungus that cannot be removed?

You run behind your flimsy breastwork of excuses and shoot from your pop-gun, "We all have weaknesses." But should we

have a weakness we can easily overcome? Come, get out from behind your foolish defense, and march forward. As you do so, calmly see what you have which hinders grand achievements. What habit have you that offends the most fastidious? For the fastidious are often your most profitable patrons. They may require much, but they also give much, and their influence is much, and your effort to please them prepares you the better to please others. Viewed in this light, what you may call a trifling fault may be costing you too much. Give it up. If I could get close enough I would whisper to you what it is; others whisper it, but not to you. Come, give it up. Though you may call it a luxury; though it be an idol, and you think it does you no harm; it is costing you too much. Give it up. These "fastidious" ones will hear of your manliness, and they will well repay you for your sacrifice. Give it up. You will be much happier for giving it up; your best friends will be happier; it will pay. Give it up.

Then again, when we shake ourselves from faults, we are sure to take on virtues and vigor, and to be more studious and skilful. What seemed to be unsurmountable will now be easy and pleasant to overcome, and our work will become a luxury. Sometimes a very little thing makes us weak and timid, and giving it up makes us strong and aggressive. Once free, we bound forward, a surprise to ourselves. Try it.

INFLAMMATION:

In inflammation hot water will be found generally preferable to cold, because it relieves constringency of the muscles, dissolves the formed or forming clot, and increases the flow of blood through the part.

It is usually supposed that constringency and the check of the blood are just what are needed, because of the extra flow of blood to the part. Neither of these suppositions are correct. Constringency must be relieved, and there is no more blood brought to the part than usual. Swelling and pain are both caused by the obstruction of the normal flow of blood through the part; promote

this flow and you cure inflammation. Everywhere and at all times pain is caused by an excessive pressure on the nerves, which everywhere accompany the arteries, and this obstruction of the blood causes the pressure. If this clodding and clogging of the blood is not relieved, these clods are decomposed, and we have maturation, and unless there is sufficient vitality of the part, and force enough to the circulation to produce new channels for the blood by a system of anastomosis, there will be a death and a breaking down and a maturation of the muscles and blood-vessels themselves.

Heat, both in inflammation and fever, is caused by nature's effort to remove obstructions. Therefore it is improper to speak of fever as a disease; it is only the result and symptom of disease. Open the pores of the skin by copious perspiration and you promote the exudation of effete matter, and do much to allay fever and remove disease. By the same process in chronic inflammation, ague and fever, rheumatism, gout, etc., enlarge the blood-vessels and promote the passing in the circulation and through the exuding organs of noxious matter, and you cure the disease.

It is not so much the amount we earn and spend that makes us poor or rich, as how we keep our accounts. Some keep no accounts, and, therefore, never know where they are; others keep their books so loosely it would puzzle a Philadelphia lawyer to decipher them; but sometimes we see a man that by his very air and manners is such a model of punctuality, method, and correctness, he is an account book of himself. Such gentlemen are always forehanded, not, perhaps, because they make more, or spend less than those who are hindhanded, but because, like those who are governed by forethought instead of hindthought, they know how to keep their books. The credit side has always a little more weight than the debit side, mainly because they make their money before they spend it, and never spend all they have. Then, too, they have the little knack of having what they earn in their own pocket instead of in the pockets of those they have worked for. They never have duns because they never owe any one, and they never have

bad debts because they never trust. "Never?" "Oh, well, hardly ever!" It is singular how customers know and confide in such dentists. They inspire confidence by the confidence they have in themselves, and the confidence they have that you will honor the confidence they have in you. You know they are cash men and expect their customers to be. They are not stern, or exacting, or penurious. Oh, no; they are as suave and obliging and confiding as women, and you would not for the world impose on their confidence. It would be cruel to ask to be trusted. When your work is done, such a man passes you your receipted bill so promptly and so politely that you know it is only a gentle hint for you to press the button of your purse. Another thing is wondrously strange—the work of such a dentist is always better than the work not paid for in a twelve month. If you owed him you would rather forget him than recommend a neighbor to visit him, and avoid him yourself when you want more work done. So we repeat, it is not so much what we earn and spend that makes us poor or rich, as how we keep our accounts.

Would you succeed? Then, whether in courtship or business; as a social man or a professional; as a transient visitor or a close friend,—remember that a hearty laugh is better than many groans; a pleasant smile than an anxious look; a confiding trust than a suspicious incredulity.

Would you succeed? Then make a downright thorough business of what you undertake; for what is worth doing at all is worth throwing your full energy into; while you should not look with suspicion on rivals, act with self-reliance, trusting only to your own force of genius and will for success; while you should not seek to tear down the good fame or labors of another, build your own so surely and so strongly that you have no fear of its overthrow by anything but your own neglect or mismanagement.

Would you succeed? Then boldly but truthfully show the world what you can do. Stand out prominently and invite inspection of what you have. Show and give them your best, and let that best be ever increasingly your best, and ever increasingly their admiration.

GOOD BOOKS.

By all means have a good library. Good books are like the company of good people—so emphatically so that we are known by the company we keep with books as with persons.

But like company generally, if we would profit by them we must not be satisfied with their mere company, nor by their being mere ornaments to tickle our vanity. We have been astonished to see how little some folks know of the character of their library. They have been harboring strangers all their lives, simply for the dignity and the good appearance of their company.

Of course all books are not to be committed to memory, nor to be used as text-books. A cursory acquaintance with some is sufficient; others we consult as books of reference when studying special subjects; others we should study with much thoroughness and method. There are many lighter books that are hardly essentials, but take us in pleasant nooks and bowers, and are rest and recreation. Their perusal are like avocations to lighten our vocation.

Thus to be well-rounded, intelligent and happy in character, and agreeable and useful in all the moods and modes of life we need a great variety of book company, and we should revel in them through many devious paths. Of course those pertaining to our business should be first in importance and place, but others also must be now and then taken in our intimate companionship. We must sometimes follow them out of our beaten path to the fields and woods, and in unaccustomed places and studies.

Make no excuse for illiteracy. Extensive reading takes time, but it is the busiest and most successful men that have time for comprehensive and varied reading.

The secret of good reading is in keeping the eye in advance of the words that are being used. In speaking, especially in public speaking, our thoughts must be in advance of what we say. So in all work, our plan of operation must be seen clearly in advance of our work. If these three hints are distinctly carried out, our thoughts will be so clearly and methodically defined, and our

manipulations so definite and well-arranged, that we shall make few blunders.

In fact, these are the great secrets between success and failure in life. The reader will longer remember, and more likely reduce to practice, what he reads; the speaker will more clearly impress his auditors; and the worker will do much better work. There will be a definite progress, a conscious growth and an expanding character, that gives solidity, dignity and strength, and a constant improvement in skill, finances and position.

We visited a village of two thousand people, twenty-five years ago, where there were four dentists, and a fifth proposed locating there. It seemed presumption; one was plenty for the whole town. How could the new comer take such a risk? Reader, it might have been just such a reason as would induce a dentist to open an office near you. Visiting the four offices he satisfied himself that there was not a good dentist in the town, and this new dentist believed himself a good dentist, and believed he could make the people believe it. His success demonstrated his faith. There are now twelve thousand inhabitants there, and one less dentist. But that new dentist is the dentist, and of course therefore doing well. The survival of the fittest proves generally true. There are always too few dentists in a place if all are poor, and in such a place there is always room for one more if that one more is head and shoulders above the rest. Therefore never mind competition if you are conscious of doing good work. Stand out distinctively for skill, suavity and goodness, and you have nothing to fear.

To seek happiness is not to find it. It is sure to evade us, or, if found, to disappoint us, though we seek it with enthusiasm and by every facility for indulgence. Even when received as a gift it is generally of poor quality and of short duration. Money cannot buy it, neither can all the luxuries of wealth and worldly honors. It is known in its intrinsic, abiding, satisfying character only to those who, seeking goodness and usefulness, draw to themselves happiness as the natural result and reward of well living and doing.

HINTS.

Conscious rectitude is a wonderful bulwark against the assaults of evil.

* * *

The truer we are to ourselves the less sensitive we shall be to what others think or say of us.

* * *

It is the consciousness of secret faults that makes us weak in our efforts against evil.

* * *

Harboring weaknesses that we may view even as trifles, binds cords about us that prevent us doing much good. .

* * *

Formalin is said to be a good germicide and disinfectant, much the character of corrosive sublimate without its toxicity.

* * *

When I hear a man mumble his words in talking and loll about in ungraceful attitudes, I am impressed that he does his work in about the same way, and that his work is of the same character.

* * *

Dr. Stahl, of Houston, Texas, writes us that dentists from the North are being constantly disappointed by emigrating to his State. Even some of the colleges are recommending their students to locate there as an inviting field for their practice. He assures us this is a great mistake; that the proportion of dentists to population, especially that portion of the population who support dentists, is greater than in the North. For instance, he says: "Of Houston's sixty-five thousand population, twenty-five thousand are negroes, and this race makes up a large percentage of the Southern population; and any dentist who is known to work for this class in the South will not receive the patronage of the whites."

From this fact, would not this be a good missionary field for some one who is willing to work for the colored race? Thirty-five years ago we made a dentist of a colored man by the name of Badger, and afterward, in Atlanta, Georgia, he became a decided success.

FOR OUR PATIENTS.

THE SUCCESSFUL MAN.

The successful man is he who by the greatest good gives the greatest happiness to the greatest number. He wipes from the cheek of sorrow the tear of grief. He stands where chilly, biting winds blow hard on him, if perchance he may shield some tender fellow-creature from its blast. He steps aside in the gutter, to raise again to its feet a fallen form. He prattles with infancy, smiles on youth, firmly grasps the hand of middle life, and smoothes the wrinkles of old age. He lifts the helpless, cheers the despondent, weeps with the bereaved, and rejoices with the light of heart. He give to the needy, censures the niggard, spurns the miser, and bitterly resents the affections of the insincere. He plants in every human heart the fragrant flower of hope, and nourishes it with the perfume of his own happiness. He believes in love, in charity, in friendship, in companionship; and, above all, he has an abiding faith in his fellow-man. He is a firm believer in the ultimate good of humanity, and his own life forms the strongest evidence in favor of this belief. He sees something good in the character of the vilest son of Adam, but is not beyond believing in the possibility of a weakness in a reputed Sampson of morals. He wishes for the best but is prepared for the worst.

The successful man is not he who lives simply for the greed of gain—who sees nothing in life save the accumulation of dollars and dimes. The cresus of Wall street, the prince of the bull pit in the Chicago Board of Trade, the bonanza king of the West, or the men who make financial Europe tremble with the touch of a pen, are not successful unless they have elements in their lives other than those which claim the attention of the world.

The statesman, standing before the lawmakers of the land and swaying the destinies of a nation by the force of his eloquence, is envied for his genius and ability, and yet his life, as measured by the one last crucial test of all, may be a failure worse than that of the humblest citizen of the domain.

The preacher, poised before his flock, and pointing out the way for them to tread, may miss the way himself.

The lawyer, doctor, artist, author, actor, all may win renown in the world and yet fall short of what constitutes success.

To be successful a man must be happy, for in all the weight of argument there is no one truth which so well stands the test of

time and experience as this which says that "happiness is the greatest good."

A man may be renowned and ruined—he may be rich and wretched. He may stand erect with a smile to the world and fall to his knees weeping in the quiet of his own closet.

And after all, the success of a man's life is measured more by the influences which surround him in the routine of his every day experience than by any other criterion.

Let me tell you who the really successful man is. It is he who, as a boy, was cherished by the love of a noble mother; who, as a young man, was absorbed by the love of a loyal girl; who, ever after, is sustained by the love of a tender wife.

It is he who gathers around him the comforts of a home, who tastes the sweets of domestic happiness. It is he who feels around his neck the clinging, thrilling arms of children, who feels on his own roughened cheek the soft and velvety cheek of his babe. It is he, around whose heart the precious tendrils twine and in whose soul is sown the seeds of love which sweeten life and add a fragrance to the time when nature dons the "sere and yellow leaf." The successful man is he who loves and is loved from the rosy dawn of life's new morn, through the heat and burden of the mid-day sun, till at last his sleepy eyelids are kissed to rest by cooling winds from nature's night of death.

Alumni News.

THE ART OF BEING DISAGREEABLE.

This is an art which some people acquire much more readily than others, being materially aided in their efforts by a native narrowness and meanness of disposition. But there is no reason why a man of ordinary gifts should not, with due attention to a few simple directions, make himself very speedily an object of aversion to all his acquaintances. If any one of our readers is aiming at that end, we have a little advice which we offer him free of all charge.

1. Let him lay it down as a fixed rule that he will not allow himself to bestow even moderate praise on the good deeds that are done under his observation. This rule rests on the theory that virtue is its own reward, and that noble conduct deserves no special recognition. A collateral and kindred principle is that the desire for human approval, however restrained it may be, is always a sign of moral weakness, and ought not to be humored in the smallest measure.

2. Let him be equally resolute to criticise, with such sharp-

ness of speech as he is able, all the faults and shortcomings of his friends and companions. It is well if he learns to make no discrimination between gross wrongdoings on the one hand, and mere defects and infirmities on the other. A lively imagination, working in conjunction with a suspicious temper, will also be often helpful to him in conjuring up grounds of censure where none really exist.

3. Inasmuch as he knows that he himself is never controlled by lofty or magnanimous motives, let him take it for granted that everybody else is in the same condition. Why should he suppose that other folks are better than himself? Is not every man the measure of his own universe? The habit of sneering, whenever disinterested benevolence is suggested as the possible ground of given actions, is of prime importance in this connection.

4. Let him exact with a miser's care all the service that can possibly be construed as belonging to him, receiving it always as a matter of right, and never as a matter of courtesy or kindness; and at the same time let him dole out, as if he were afraid of being reckoned a spendthrift, the meager attentions that he may choose to give in return.

5. Let him show his worst side to those that have the most sacred claims on him, reserving any thoughtfulness and pleasantness, if he have any, for those who do not stand close to him, and who do not appreciate in the slightest degree the things that he may do to conciliate their good will.

By faithfully following these directions, he will succeed in alienating his friends, in repelling all those whom he might have won, and in making himself an object of universal dislike. A few faithful souls may cling to him longer than the rest; but even they will at last be worn out with his infinite pettiness, and will give him up to the devices and desires of his own heart. Nothing will be left him but a morbid egotism, a dark and cheerless old age, and six feet of ground over which no honest tear will ever be shed.

Nashville Christian Advocate.

THE FIRST ANESTHETIC.—The fiftieth anniversary of the first use of anesthesia for the purpose of relieving pain was commemorated recently in a fitting manner by the Connecticut State Dental Society, at Hartford, Conn. A memorial tablet had been provided by small subscriptions from dentists in every State in the Union, as a tribute to the discoverer, Dr. Horace Wells; and this was placed on the building, which at present stands on the old site of Dr. Wells' office. The work was performed before a large and notable gathering of dentists and other scientists.

THE SIN OF IDLENESS.

Idleness has been called "one of the seven deadly sins." It contaminates the soul as water standing still becomes foul and impure. By it the intellect becomes dull, time is wasted, and the spirit rendered gloomy, fretful, and depressed. No work, is far worse than overwork. Work is useful as a discipline, as an educator, as a source of blessing. The busy man lives more in a day than the idle man in three score years. Coleridge says: "If the idle are described as killing time, the methodical man may be said to call it into life and being. He organizes the hours and gives them a soul." We are impelled to work by the rewards which are promised, but the effect of work on ourselves is its richest reward. Mrs. Browning wrote nothing more beautiful and true than this:

"Get leave to work

In this world—'tis the best you get at all;
 For God in cursing, gives us better gifts
 Than man in benediction. God says; 'Sweat
 For foreheads;' men say 'crowns;' and so we are crowned,
 Ay, gashed by some tormenting circle of steel
 Which snaps with a secret spring. Get work; get work.
 Be sure 'tis better than what you work to get."

Work drives away depression, whets the appetite for food, invites sleep, promotes digestion, strengthens the muscles and sinews, gives free circulation to the blood, stimulates the intellectual faculties, provides the comforts of life, develops all the powers which it brings in exercise, transforms stupid ignorance into brilliant genius, fills the world with works of art and literature, and develops the resources of nature. Nothing can stand before work.

J. M. Buckley.

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There is no royal road to favor, honor, or success. The way is open to all; but it is steep and rugged,—yes, and slippery; and you must toil and sweat if you would reach the summit. Remember, too, it is a long road. Many a time you may think you deserve recognition, applause, even reward, and yet you are in the shadow, and no one praises you or appreciates your work. Steady there, boy; steady. All this will come in time. It is for you to delve, to struggle, to push on and up, step by step. Be hindered by no discouragement; be baffled by no perplexities; be burdened by no encumbrances. Push, tug, pull, drive, rush on, and compel recognition by solid worth, earn applause by signal triumphs, and be sure reward will follow success.

WEATHER FORECASTS BY THE TEETH.

"What's the use of a man in my line keeping a barometer around?" said a dentist the other day. "I can tell when storms are coming, and when we are apt to have long spells of good sunny weather, as accurately, if not more so, than any barometer or weather indicator ever made. And that, too, without budging a step out of my office, without consulting any kind of scientific instrument, and without even so much as glancing out of my window. And if you will ask any other dentist in town about it I'll wager that he'll tell you the same thing.

"It's a very simple matter. Human beings are the greatest barometers in the world, and there is no part of the human system which is so quickly affected by damp weather as the teeth. Of course, the degree in which a man is affected by the weather depends entirely on the condition of his teeth, but how many people have perfect teeth? Very few, I can assure you. Now, during the week of fine weather which preceded the last rainy spell, I had over thirty people, two-thirds of them strangers to me, come in with aching teeth. Most of it was neuralgia, but I knew the sign and said to myself: 'We'll have some rainy weather now surely.' It was a sure indication, and I knew there could be no mistake when, as the end of the week drew nearer, they began to come in faster and faster. In the stormy weather, they keep coming in, and then all of a sudden they'll stop, and though it may rain for two or three days after that, I know that fine weather is at hand. When toothache patients are few I know that we are in for a lot of good weather, and though the people would exalt at the prospect, the dentist groans, for while it is not so pleasant, the work of pulling teeth, treating neuralgia, and curing toothaches, is far more lucrative than filling teeth. I can attend to ten such cases in less time than it takes to fill one tooth. It all proves, however, that the human body is the best barometer in the world, and if you would have weather forecasts of an accurate nature, consult your dentist."

EASY TO LOCATE.—Stranger—Where does that new dentist have his office?

Policeman—You mean the one who pulls teeth without pain?

Stranger—Yes.

Policeman—Go right around the corner. You will have no trouble finding his office. You can hear his patients yell half a block away.

Texas Siftings.

NOTICES.

The fiftieth annual meeting of the Mississippi Valley Dental Association will be held in Cincinnati, April 17th and 18th, 1895.

Dr. J. Taft, President.

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Montana has a dental law. It provides for a board of examiners appointed by the Governor. Any of the board may grant a temporary certificate *ad interim*. Examination fee without diploma, fifteen dollars; with, ten dollars; and for all, one dollar a year thereafter; forfeit for not renewing, five dollars. Each of the board receives five dollars a day while in session, with all expenses. Penalty for violating any provision of this law, fifty dollars.

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The second union meeting of the Washington City Dental Society and the Maryland State Dental Association, will be held in Baltimore, April 17th and 18th. A cordial invitation is extended to members of the profession to be present and participate. Special hotel rates will be secured. Those desiring programmes, please address

W. W. Dunbracco, Sec., 1023 Edmondson avenue, Baltimore.

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ILLINOIS STATE DENTAL SOCIETY.—The thirty-first annual meeting of the Illinois State Dental Society will be held at Galesburg, May 14th to 17th, inclusive. An interesting program is in course of preparation. All dentists practicing in Illinois are especially invited to attend. A cordial invitation is extended to the profession generally. This will be the first meeting held in Galesburg since 1876, and it is the hope of the officers that it will be one of the most profitable meetings in the history of the Society.

Louis Ottofy, Secretary.

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Asbury Park was selected as the next place of meeting of the American Association.

OFFICERS ELECTED.

J. Y. Crawford, Nashville, Tenn., President; S. G. C. Watkins, Montclair, N. J., First Vice-President; Thos. Fillibrown, Boston, Second Vice-President; Geo. H. Cushing, Chicago, Recording Secretary; Emma Eames Chase, St. Louis, Corresponding Secretary; Henry W. Morgan, Nashville, Treasurer; C. N. Peirce, H. A. Smith, T. S. Waters, Louis Ottofy, Executive Committee.